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TNIK	1	MASDSPARSLDEIDLSALRDPAGIFELVEVGVNGTYGVYKGRHVKTGQLAAIKVMDVTGDEEEIKQ	EINMLKKYSHHR
NIK	1	MANDSPAKSLVDIDLSSLRDPAGIFELVEVGVNGTYGVYKGRHVKT-VTAAIKVMDVTGDEEEITL	EINMLKKYSHHR
TNIK	81	NIATYYGAFIKKNPPGMDQLWLVMFCGAGSMTDLKNTKGNLTKEEWIAYICREILRGLSHLH	QHKVIHRDIKGQNVL
NIK	80	NIATYYGAFIKKSPPGHDDQLWLVMFCGAGSITDLKNTKGNLTKEEWIAYISREILRGLAHLH	IEVVIHRDIKGQNVL
TNIK	161	LTENAEVKLVDFGVSAQLDRTVGRNRTFIGTPYWMapeviACDENPDATYDFKSDLWSL	GITAIEMAEGAPPLCDMHMPMR
NIK	160	LTENAEVKLVDFGVSAQLDRTVGRNRTFIGTPYWMapeviACDENPDATYDYRSDLWSC	GITAIEMAEGAPPLCDMHMPMR
TNIK	241	ALFLIPRNPAPRLKSKKWSKKFQSFIESCLVKNHSQRPATEQIMKHPFIRDQPNERQVRIQLKD	HIDRTKKKRGEKDETE
NIK	240	ALFLIPRNPAPRLKSKKWSKKFFSFIGCLVKNYMQRPSTEQLLKHPFIRDQPNERQVRIQLKD	HIDRTKKKRGEKDETE
TNIK	321	YEYSGSEEEEEEN--DSGEPSSILNLPGESTLRRDFLRLQLANKERSEALRRQQLLEQQ--	RENEEHKRQLLAERQKRRIE
NIK	320	YEYSGSEEEEEEN--GEPSSIVNVPGESTLRRDFLRLQQENKERSEALRRQQLLEQQQLRE	QEEYKRQLLAERQKRRIE
TNIK	397	EQKEQRRRLEEQRRREKELRKQQEREQRR--	HYEEQMRR--EEERRRAEHQEQYIRRRQLEEEQRQLE
NIK	400	QKEQRRRLEEQRRREARQQEREQRRREQEKRRLEELERRRKEEEERRRAEEERKRRV	EREQEQYIRRRQLEEEQRHLE
TNIK	460	ILQQQLLHEQALLLEYKRRQLEEQRAERLQRQLKQERDYLVSLOHQREQRPVEKKPLHYK	EGMSPSEKPAWAKEVEE
NIK	480	ILQQQLLQEQAMLLHDERRPHAQQ-QPPPPQQQDRS--	KPSFHAPF--P--KP--HYDPAQ
TNIK	540	RSRLNRQSSPAMPHKVANRTSDPNIPPRSEFSISGVQPARTPPMLRPVDPQIPH	LVAVKSGQPALTASQSVHEQPTKGL
NIK	532	RAREVQWS--HLASLKN--NVSPVSRSHSFSDPSPKFAHHHLRSQDPCPF--	SR-----SEGL
TNIK	620	SGFQEALNVTSHRVEMPRQNSDPTSENPPLPTRIEKFRSSWLQRQEEED--IPPKVP	QRTTISIPALARKNSPGNGSALGPR
NIK	584	S-----QSDSKSE-VPEPT-----QKAWSRSDSDEVPRVFTTTSRSPVL	SRDSPLQGGGQQNS
TNIK	699	LGSQPIRASNPDLRRTEPILLESPLQRTSSGSSSSSSSTPSQPSQGSQPGSQAGSS	ERTVRANSKSEGSFVLPHEPAK
NIK	640	QAGQRNSTSSIEPRLLWERVEKLVPRPGSGSSGSSNSGSP--GSHPGSQSGS	GERFVRSSSKSEGSFSPRQESAA

FIG. 1A



TNIK	779	VKPEESRDITRPSRPA	SYKKAIDEDLTALAKELRELRIEETNRPMKKVTDYSSSSSEESSESSSEEEEDGGESETHDGTVAVS
NIK	716	KKPDXXKEVFR	-----SLKPAGEVDLTALAKELRAV--EDVRPPHKVTDYSSSSSEESGTTDEEEDVEQEGAGDDSTSGP
TNIK	859	DIPRLIPTGAPGSNEQYN	GMVGTGHTSHADSFSGSISREGTLMIRETSGEKKRSGHSDSNFAGHINLPDLVQQSHS
NIK	788	EDTRAASSPNLSNGETESVK	TMIVHDDVSEPE--AMTPSKEGTLIVRQTQSASS-----TLQKHK
TNIK	939	PAGTPTTEGLGRVSTHSQEMDSG	TEYGMGSSTKASFTFPFVDPNVMTSPPTDEDEDEEESAAALFTSELRLRQEQAKLNEAR
NIK	846	-----	SSSFTFPFIDPRLQLQISPS-----GTTVTSVVGFSCDGLRPEAIRQDPTR
TNIK	1019	KISVVNVNPTNIRPHSDTPEIRKYKKRFN	SEILCAALWGVNLLVGTENGMLMLLDRSGQGVYNNLINRRRFQQMDVLEGLN
NIK	892	KGSVVNVNPTNTRPQSDTPEIRKYKKRFN	SEILCAALWGVNLLVGTESGLMLLDRSGQGVYPLISRRRFQQMDVLEGLN
TNIK	1099	VLVTISGKKNKLRVYLSWLRNR	ILHNDPEVEKKQGWITVGDLEGCTHYKVVVKYERIKFLVIALKNAVEIYAWAPKPYHK
NIK	972	VLVTISGKKDKLRVYLSWLRNK	ILHNDPEVEKKQGWITVGDLEGQVHYKVVVKYERIKFLVIALKSSVEIYAWAPKPYHK
TNIK	1179	FMAFKSFADLQHKPLLVDLTVEEGQRLKVI	FGSHTGFHVIDVDSGNSYDIYIPSHIQNIITPHAIWILPKTDGMEMLVCY
NIK	1052	FMAFKSFCELLHKPLLVDLTVEEGQRLKVI	YGCAGFHAVDVDSGSVYDIYIPTHIQCSIKPHAIITILPNTDGMELLVCY
TNIK	1259	EDEGVYVNTYGRITKDVVLQWGEMPTSVAYI	HSNQIMGWGEKAEIRSVETGHLDDGVFMHKKRAQRLKFLCERNNDKVFFAS
NIK	1132	EDEGVYVNTYGRITKDVVLQWGEMPTSVAYI	RSNQTMGWGEKAEIRSVETGHLDDGVFMHKKRAQRLKFLCGRNDKVFFAS
TNIK	1339	VRSGGSSQVFFMTLNRNSMMNW	
NIK	1212	VRSGGSSQVFFMTLGRTSLLSW	

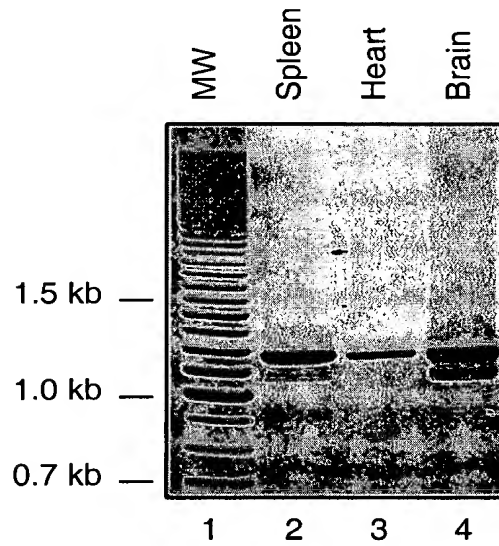
FIG.-1B



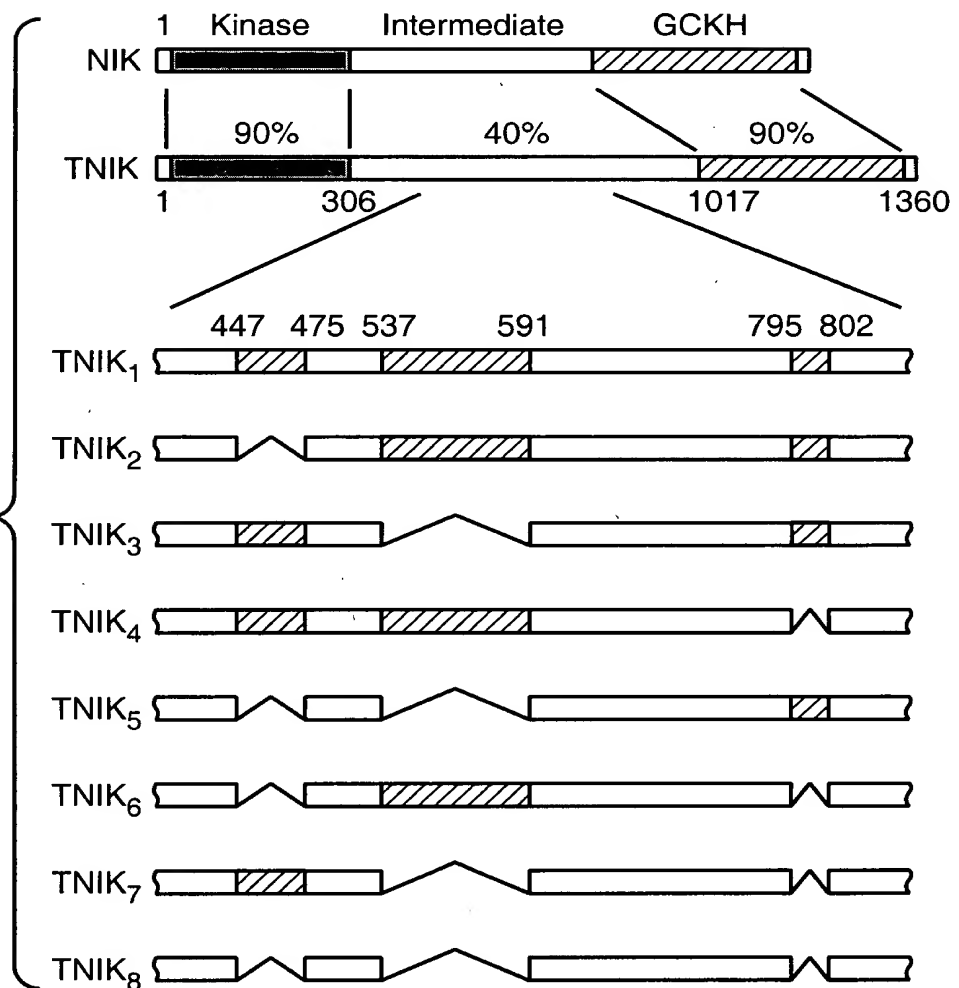


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**FIG.\_2**



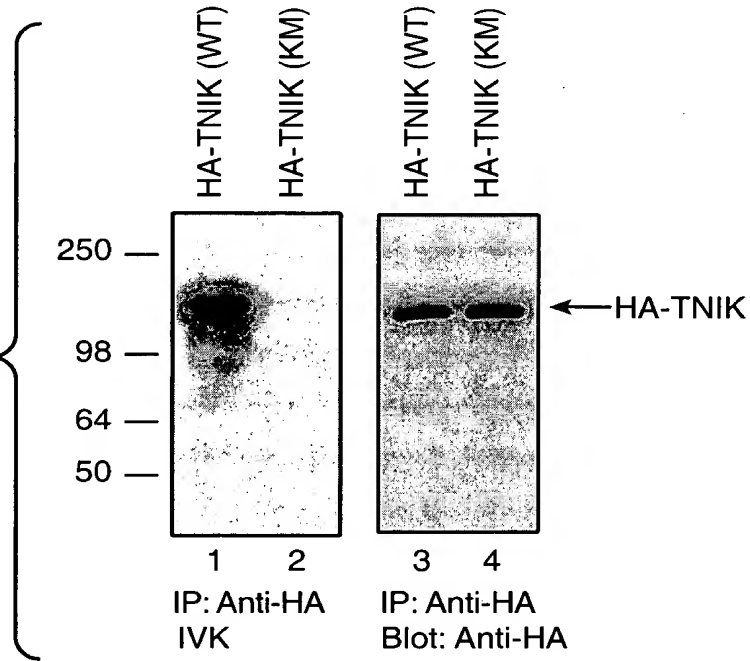
**FIG.\_3**



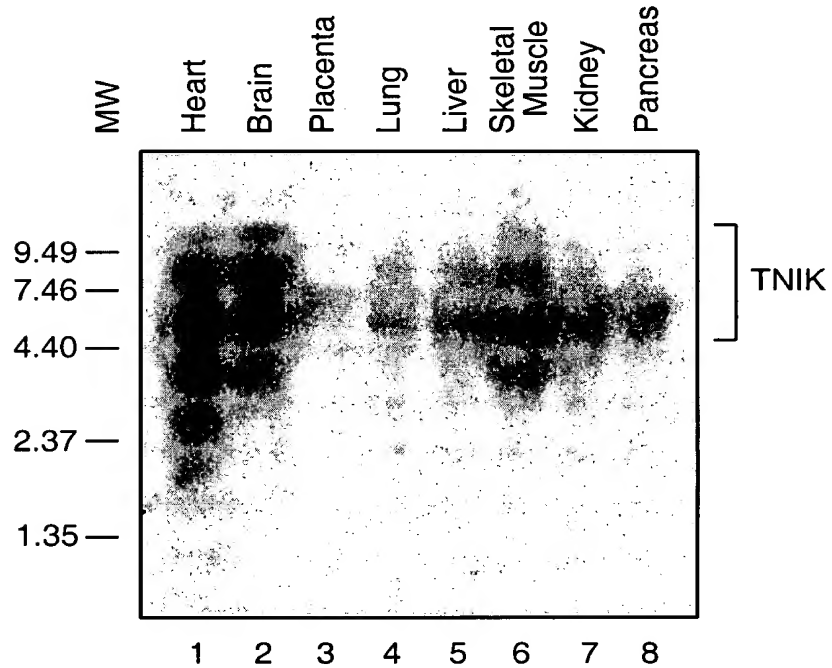


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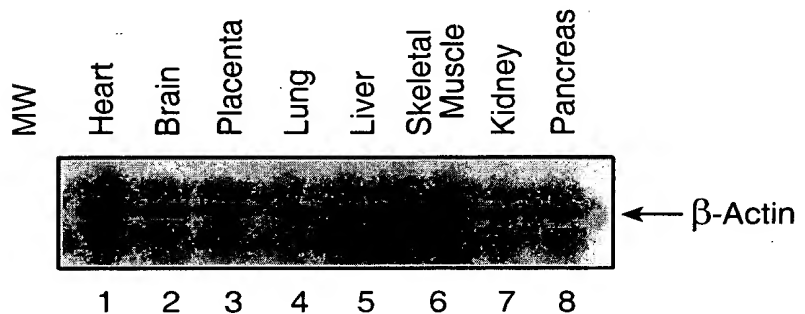
**FIG.\_4**



**FIG.\_5A**



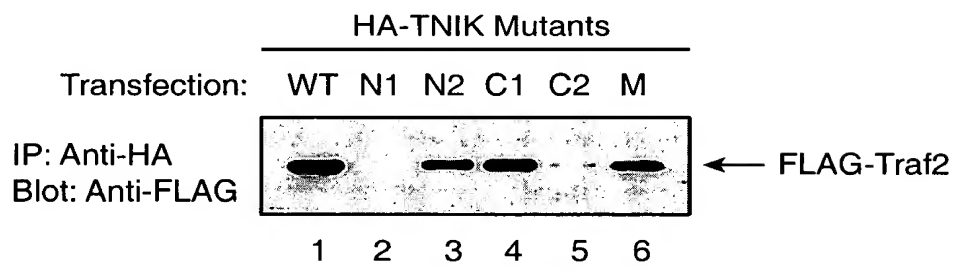
**FIG.\_5B**



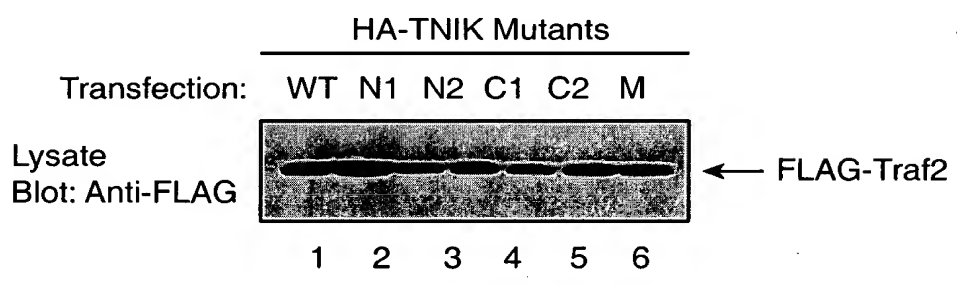




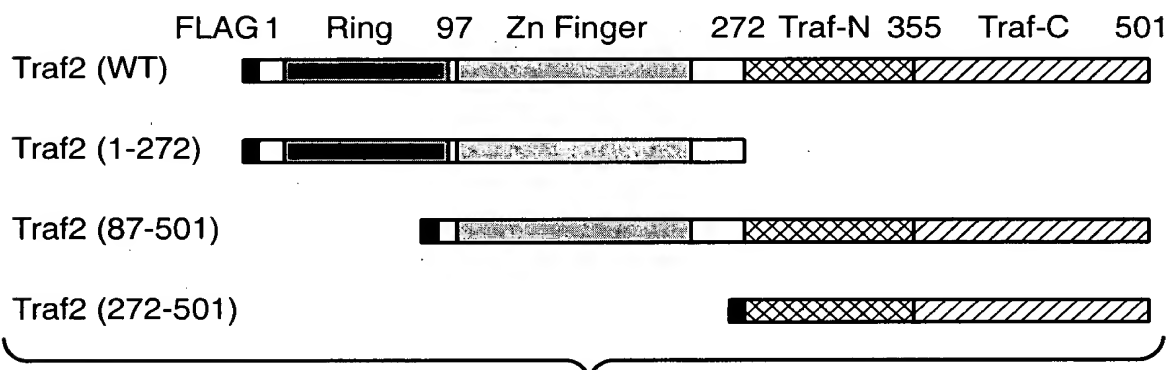
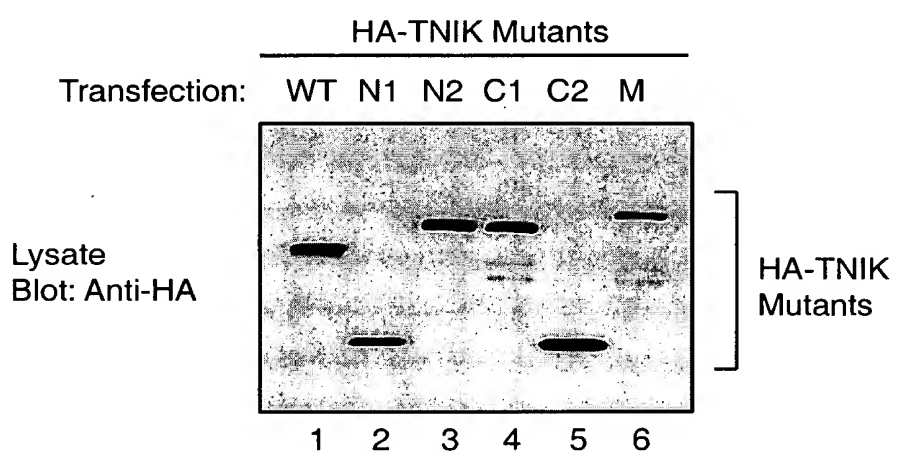
**FIG.\_8A**



**FIG.\_8B**



**FIG.\_8C**

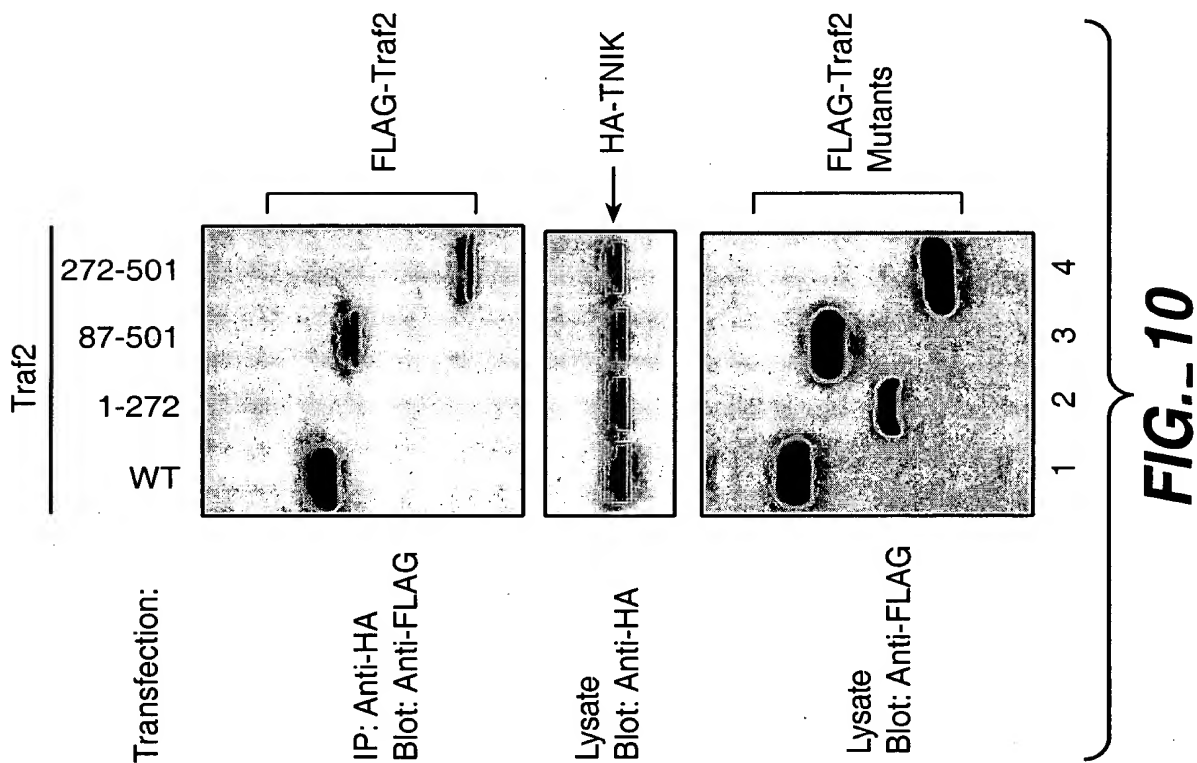
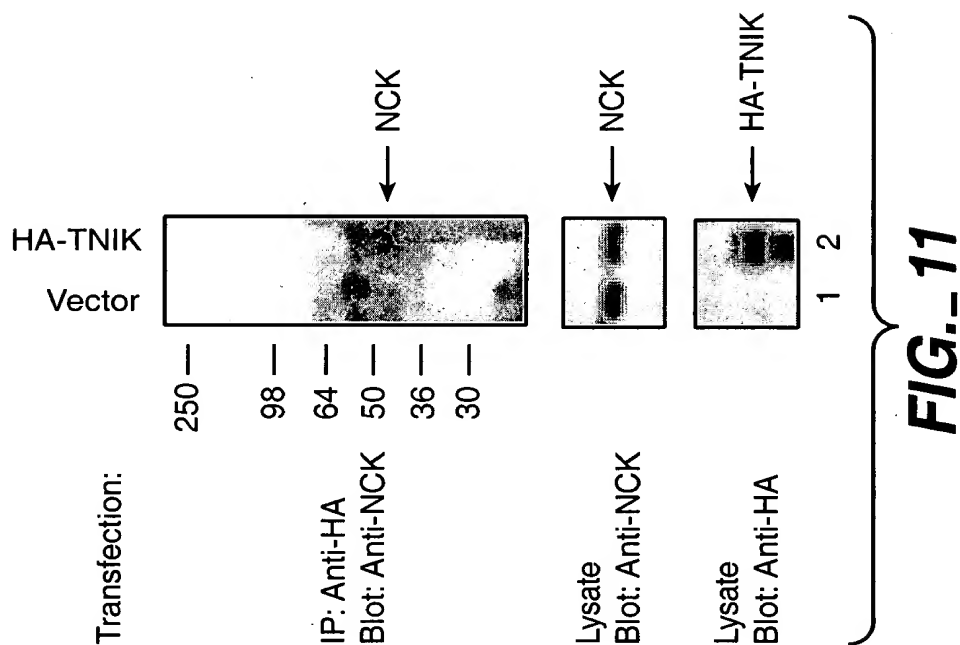


**FIG.\_9**





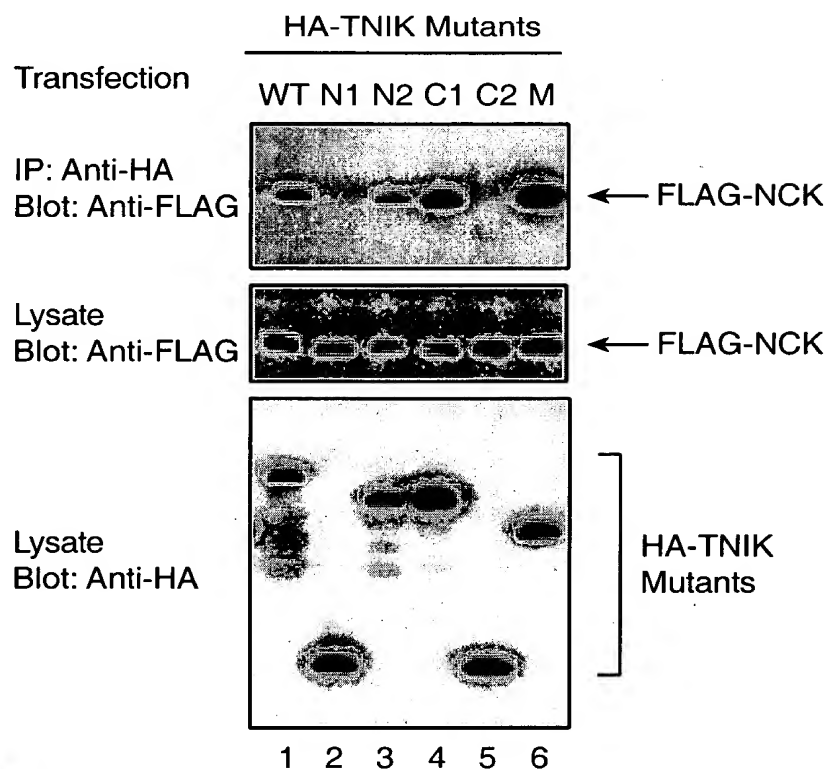
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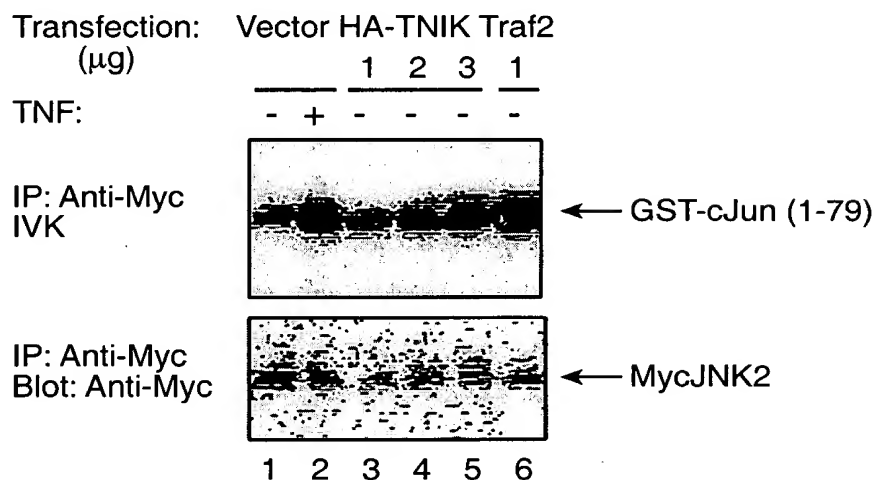


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**FIG.\_12**



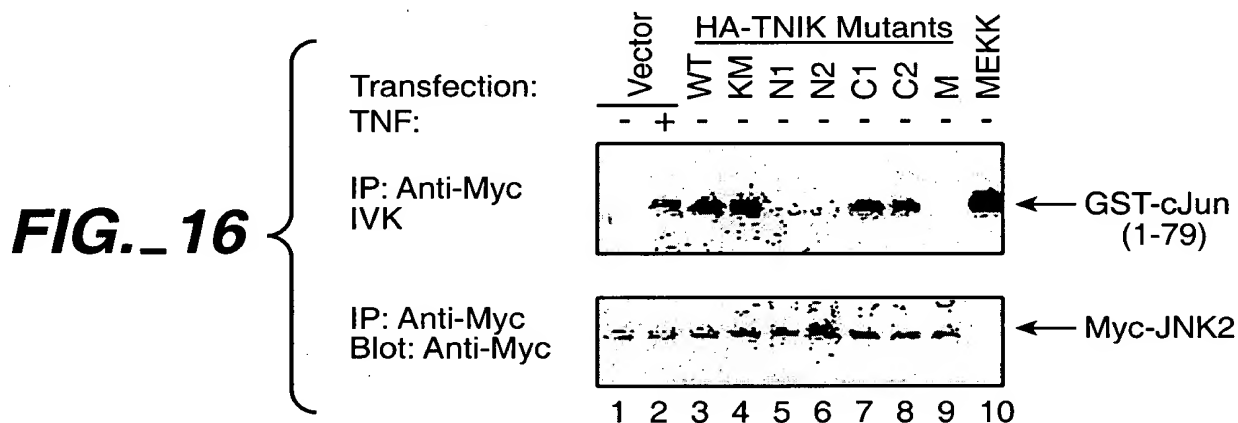
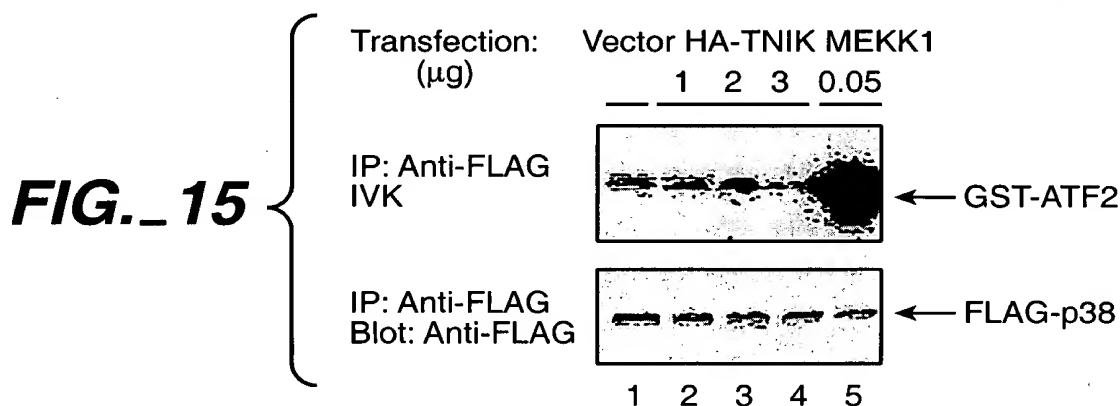
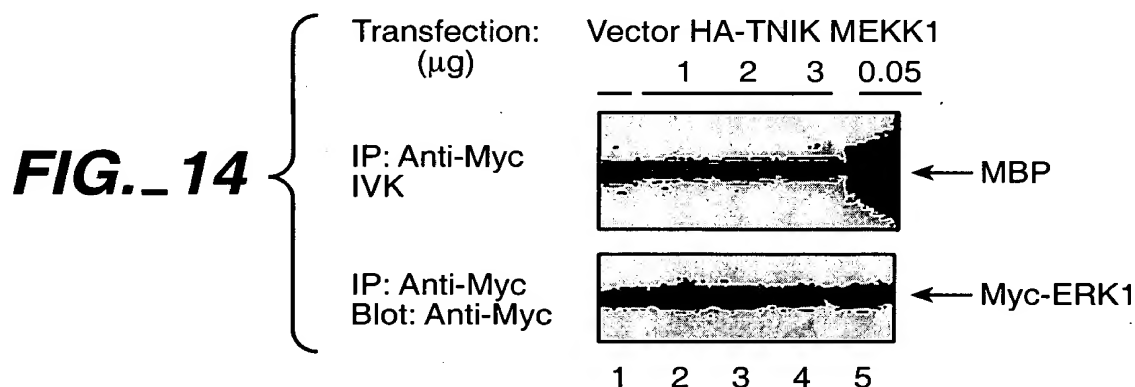
**FIG.\_13**







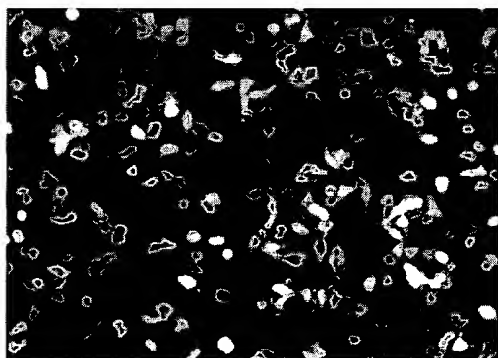
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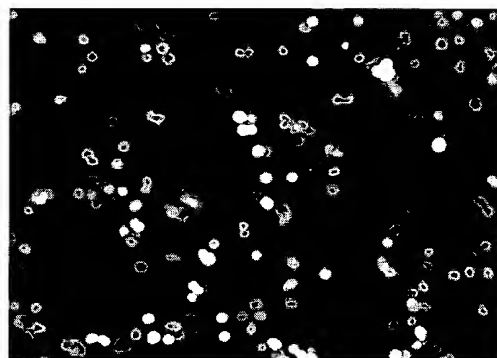


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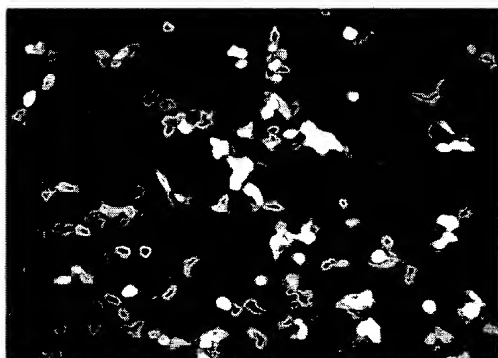
Vector



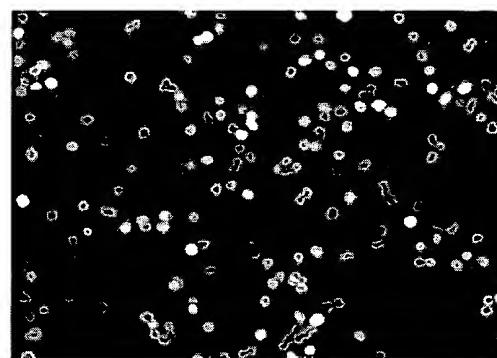
TNIK



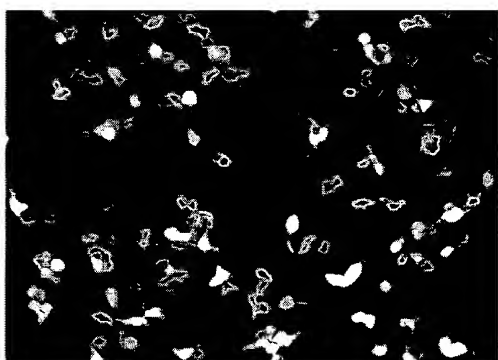
TNIK (KM)



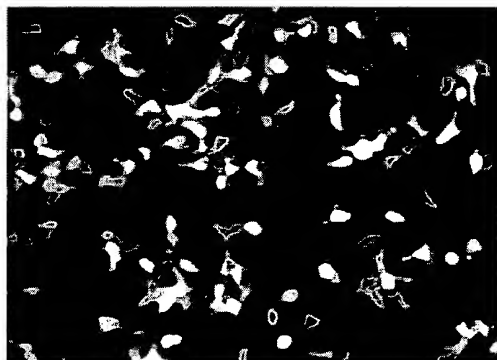
TNIK (N1)



TNIK (C1)



JNK2



**FIG. 17**



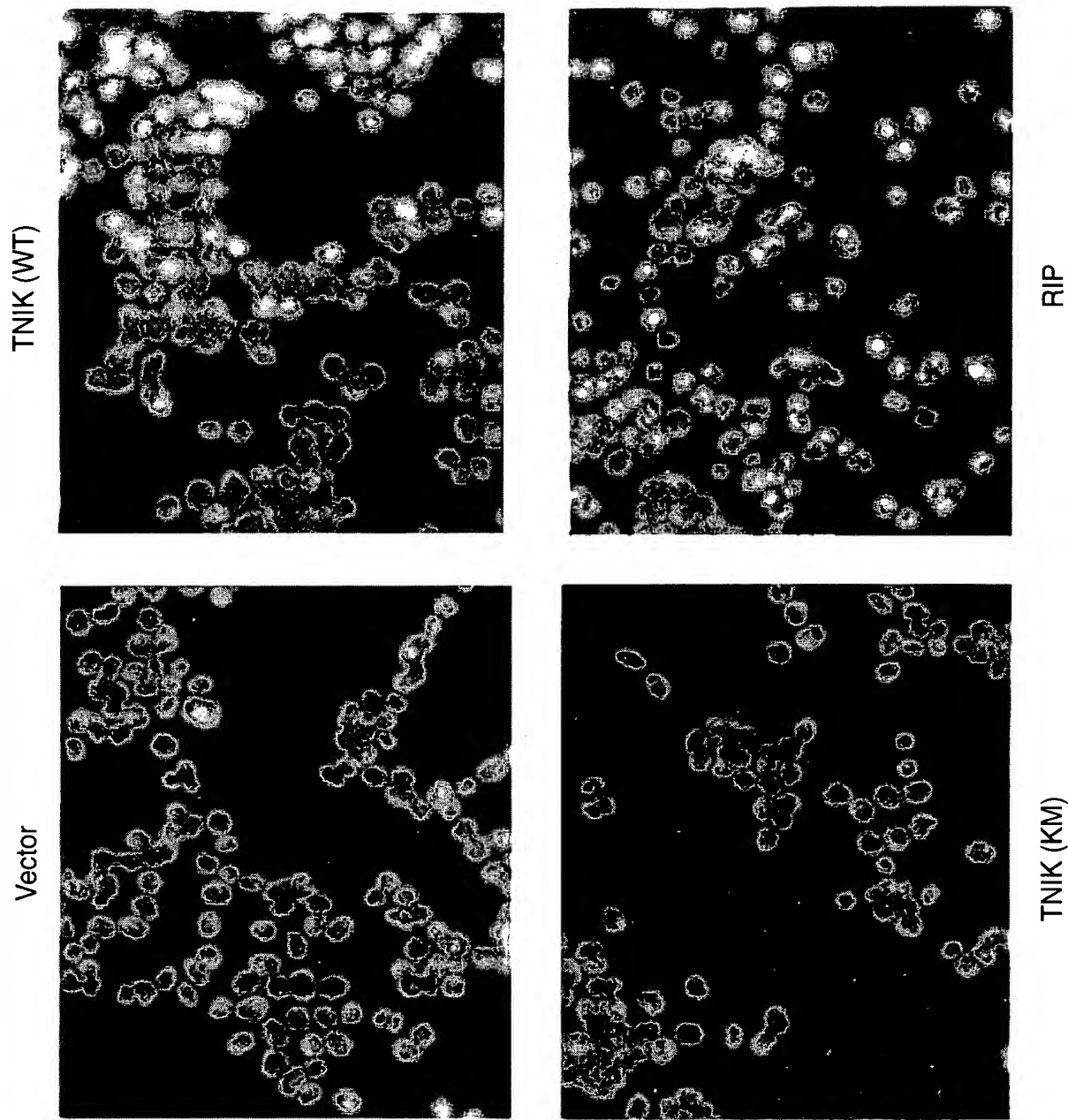
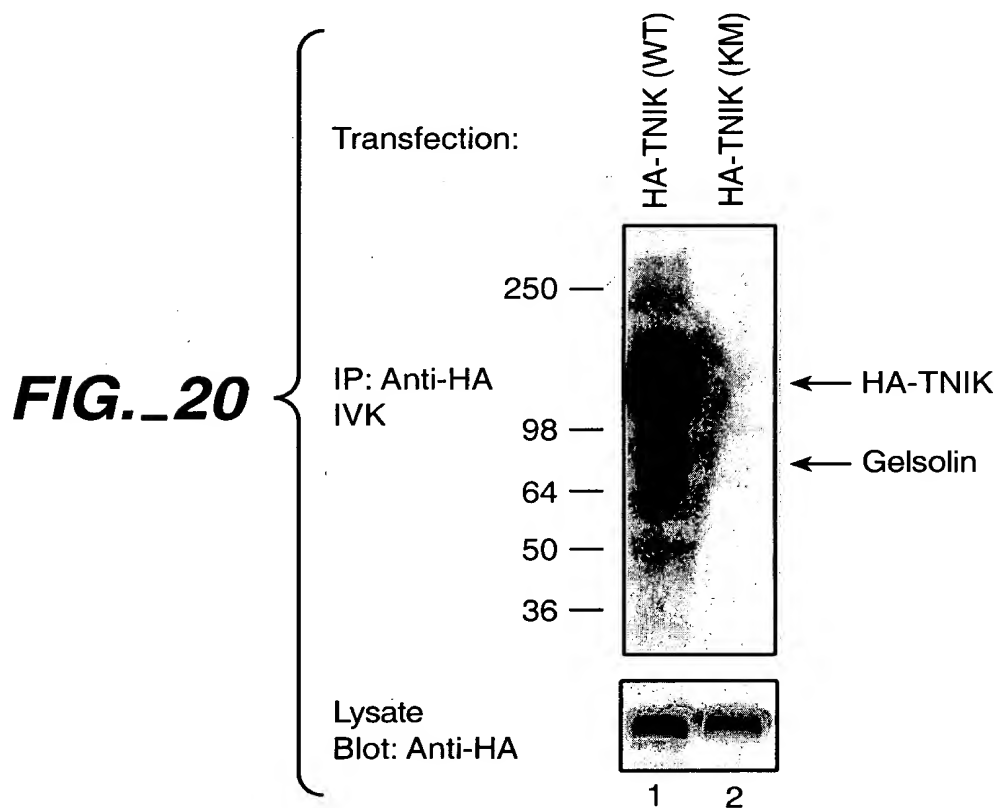
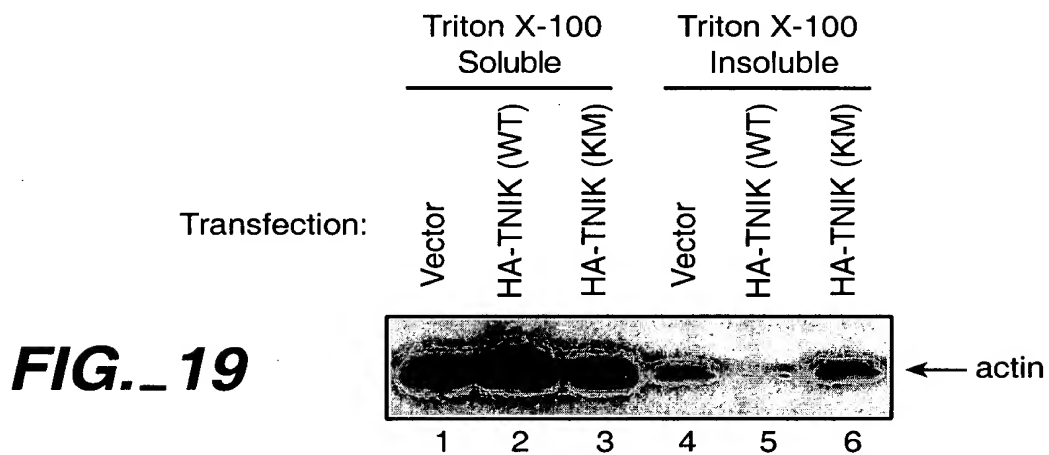


FIG.-18



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ATGGCGAGCGACTCCCCGGCTCGAAGCCCTGGATGAAATAGATCTCTCGGCTCTGAGGGACCCCTGCAGGGATCTTT  
GAATTGGTGGAACTTGTGGAAATGGAACATACGGGCAAGTTTATAAGGGTCGTCAATGTCAAACGGGCCAGCTT  
GCAGCCATCAAGGTTATGGATGTCAAGGGGATGAAGAGGAAGAAATCAACACAGAAATTAACATGTTGAAGAAA  
TATTCTCATCACCGGAATATTGCTACATACTATAGGTGCTTTTATCAAAAAGAAACCCACAGGCATGGATGACCAA  
CTTTGGTTGGTGGAGTTTGTGGTCTGTGCTCACCGACCTGATCAAGAAACACAAAAGGTAACACGTTG  
AAAGAGGAGTGGATTGCATACATCTGCAGGGAATCTTACGGGGCTGAGTCACCTGCACAGCATAAAGTGATT  
CATCGAGATATTAAAGGGCAAAATGTCTTGTGCTGACTGAAATGACAGAAAGTTAAACTAGTGGACTTTTGGAGTCACT  
GCTCAGCTTGATCGAACACAGTGGGCAGGAGGAATACTTTTCAATTGGAACTCCCTACTGATGGCACCCAGAAATTATT  
GCCTGTGATGAAAACCCAGATGCCACATATGATTTCAAGAGTGACTTGTGCTTTTGGTATCACCGCCATTGAA  
ATGGCAGAAAGGTGCTCCCCCTCTGTGTGACATGCACCCCATGAGAGCTCTCTTCTCATCCCCGGAAATCCAGCG  
CCTCGGCTGAAGCTAAGAAAGTGGTCAAAAATTTCCAGTCAATTTATTGAGAGCTGCTTGGTAAAGAAATCACAGC  
CAGCGACCAAGCAACAGAAATGATGAAGCATCCATTTATACGAGACCAACCTAATGAGCGACAGGTCCCGCAT  
CAACTCAAGGACCATATTGATAGAACAAAGAAAGCAGGAGAAAGATGAGACAGAGTATGAGTACAGTGGA  
AGTGAGGAAGAGAGGAGAAATGACTCAGGAGAGCCAGCTCCATCTGAACTCTGCCAGGGAGTCCGACGCTG  
CGGAGGGACTTTCTGAGGCTGCAGCTGGCCCAACAAGGAGCGTTCTGAGGCCCTACGGAGGCAGCAGCTGGAGCAG  
CAGCAGCGGAGAAATGAGGAGCAACAAGCGGAGCTGTGGCCGAGCGTCAGAAAGCGCATCGAGGAGCAGAAAGAG  
CAGAGCGGCGGCTGGAGGAGCAACAAGCGGAGAGAAAGGAGCTGCGGAAGCAGCAGGAGAGGAGCAGCGCCGG  
CACTATGAGGAGCAGATGCGCCGGAGGAGGAGGAGCGCTGCGGAGCATGAACAGGAATACATCAGGCGGACAG  
TTAGAGGAGGAGCAGACAGTTAGAGATCTTGACGACAGCTACTGCATGAACAAGCTCTACTTCTGGAATAT  
AAGCGCAAAACAATTGGAAGAACAGAGAACAGCAGAAAGACTGCAGAGCGAGCTAAAGCAAGAAAGAGACTACTTA  
GTTTCCCTTCAGCATCAGCGGCAGGAGCAGAGGCCCTGTGGAGAAAGGCCACTGTACCATTACAAGAGGAATG  
AGTCCTAGTGAGAAGCCAGCATGGGCCAAGGAGGTAGAAGAACGGTCAAGGCTCAACCGGCAAGTTCCCCTGCC  
ATGCCCTACAAGGTTGCCAACAGGATATCTGACCCCAACCTGCCCCCAAGGTCGGAGTCCCTTCAGCATTAGTGGA  
GTTTCAGCCTGCTCGAACACCCCCCATGTCTCAGACCAGTCCGATCCCCAGATCCCATCTGGTAGCTGTAAATCC  
CAGGGACCTGCTTGAACCGCTCCAGTCAAGTGCACGAGCAGCCCAAAAGGGCTCTCTGGGTTTCAGGAGGCT  
CTGAACGTGACCTCCACCGGTGGAGATGCCACGCCAGAACTCAGATCCCACTCGGAAATCTCTCTCTCCCC  
ACTCGCATTGAAAAGTTTGACCGAAGCTCTTGGTTACGACAGGAAGAAAGACATTCACCAAGGTCCTCAAGA

FIG. 21A

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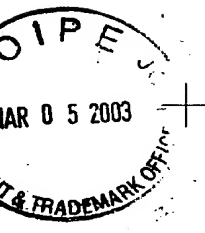
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ACAACTTCTATATCCCAGCATTAGCCAGAAAGAATTCTCTGGGAATGGTAGTGCTCTGGACCCAGACTAGGA  
TCTCAACCCATCAGAGCAAGCAACCTGTATCTCCGGAGAACTGAGCCCATCTTGGAGAGCCCCCTTGAGAGGACC  
AGCAGTGGCAGTTCTCCAGCTCCAGCACCCCTAGCTCCAGCCCCAGCTCCCAAGGAGGCTCCAGCCTGGATCA  
CAAGCAGGATCCAGTGAAACCCAGAGAAATCCAGGACATTACCCGGCCAGTCGACCAGCTAGCTACAAAAGCTATA  
CCTGCCAAAGGTGAACCCAGAGAAATCCAGGACATTACCCGGCCAGTCGACCAGCTAGCTACAAAAGCTATA  
GATGAGGATCTGACGGCATTAGCCAAAGAACTAAGAGAACTCCGGATTGAAGAAACAAACCGCCCAATGAAGAAG  
GTGACTGATTACTCTCTCCAGTGAGGAGTCAGAAAGTAGCGAGGAAGAGGAGGAAGATGGAGAGCGGAGACC  
CATGATGGGACAGTGGCTGTACGGACATACCCAGACTGATACCAACAGGAGCTCCAGGCAGCAACGAGCAGTAC  
AATGTGGGAATGGTGGGACGCATGGCTGGAGACCTCTCATGCGGACAGTTTCAGCGGCAGTATTTCAAGAGAA  
GGAACCTTGATGATTAGAGAGACGCTCGGAGAGAAGCGATCTGCGCCACAGTGACAGCAATGGCTTTGCTGGC  
CACATCAACCTCCCTGACCTGGTGACAGAGCCATTCTCCAGCTGGAACCCGACTGAGGACTGGGGCGGCTC  
TCAACCCATTCCAGGAGATGGACTCTGGGACTGAAATATGGCATGGGAGCAGCACAAAGCCTCTTCAACCCCT  
TTTGTGGACCCAGAGTATACAGACGCTCTCCCACTGATGAAGATGAAGAGGATGAGGAATCATCAGCCGCAGCT  
CTGTTTACTAGCGAACTTCTTAGGCAAGAACAGGCCAAACTCAATGAAGCAAGAAAGATTTCCGGTGGTAAATGTA  
AACCCAAACCAACATTCGGCCCTCATAGCGACACACAGAAATCAGAAATACAGAAACGATTTCAACTCAGAAATA  
CTTTGTGCAGCTCTGTGGGTGTAAACCTTCTGTGGGACTGAAATGGCCCTGATGCTTTTGGACCGAAAGTGGG  
CAAGGCAAGTCTATAATCTGATCAACCGGAGGCGATTTTCAGCAGATGGATGTCTAGAGGACTGAATGTCCCTT  
GTGACAAATTTTCAGGAAAGAAAGAAATAAGCTACGAGTTTACTATCTTTTCATGGTTAAGAAACAGAAATACTACATAAT  
GACCCAGAAGTAGAAAAGAAACAAGGCTGGATCACTGTTGGGACTTGGAAAGCTGTATACATTATAAAGTTGTT  
AAATATGAAAGGATCAAAATTTTGGTGATTGCCCTTAAAGAAATGCTGTGGAAATATATGCTTGGGCTCCTAAACCG  
TATCATAAATTCATGGCATTTAAGTCTTTTGCAGATCTCCAGCACAGCCTCTGCTAGTTGATCTCACGGTAGAA  
GAAGGTCAAAGATTAAAGGTTATTTTGGTTCAACACACTGGTTTCCATGTAAATTGATGTTGATTCAGGAAACTCT  
TATGATATCTACATACCATCTCATATTTCAGGGCAATATCACTCCTCATGCTATTGTCTATTGCTTAAACAGAT  
GGAATGGAAATGCTTGTGCTATGAGGATGAGGGGTGATGTAAACACCTATGCCCCGATACCTAAGGATGTG  
GTGCTCCAATGGGGAGAAAATGCCCCACGCTGTGGCCCTACATTCATTCCAAATCAGATAATGGGCTGGGCGAGAAA  
GCTATTGAGATCCGGTCAGTGGAAACAGGACATTTGGATGGAGTATTTATGCATAAGCGAGCTCAAAGGTTAAAG  
TTTCTATGTGAAAGAAATGATAAGGTAATTTTGTGCATCCGTGCGATCTGGAGGAAGTAGCCAAAGTGTTTTTCATG  
ACCCCTCAACAGAAATTCATGATGAACCTGGTAA

FIG.-21B







TCCCAGCATAGCCAGAAAGAATTCTCCTGGGAATGGTAGTGCTCTGGGACCCAGACTAGGATCTCAACCCATC  
AGAGCAAGCAACCTGATCTCCGGAGAACTGAGCCCATCTTGGAGAGCCCCCTTGACAGAGGACCAAGAGTGCGAGT  
TCCTCCAGCTCCAGCACCCCTAGCTCCAGCCCCAGCTCCCAAGGAGGCTCCAGCCTGGATCACAAAGCAGGATCC  
AGTGAACGCACCAAGATTGAGCCCAACAGTAAGTCAGAAAGGATCACCTGTGCTTCCCATGAGCCTGCCAAGGTG  
AAACAGAAGAATCCAGGGACATTACCCGGCCAGTCGACCAAGCTAGCTACAAAAGCTATAGATGAGGATCTG  
ACGGCATTAGCCAAAGAACTAAGAGAACTCCGGATTGAAGAAACAAACCCGCCAATGAAGAAAGGTGACTGATTAC  
TCCTCCTCCAGTGAGGAGTCAGAAAGTAGCGAGGAAGAGGAGGAAGATGGAGAGAGCGAGACCCCATGATGGGACA  
GTGGCTGTGAGCGACATACCCAGACTGATACCAACAGGAGCTCCAGGAGCAACGAGCAGTACAATGTGGGAATG  
GTGGGACGCAATGGGCTGGAGACCTCTCATGCGGACAGTTTCAGCGGCAGTATTTCAAGAGAAAGAAACCTTGATG  
ATTAGAGAGACGTCTGGAGAGAAAGCGATCTGGCCACAGTGACAGCAATGGCTTTGCTGGCCACATCAACCTC  
CCTGACCTGGTGACGAGAGCCATTCTCCAGCTGGAAACCCGACTGAGGAGCTGGGCGCGTCTCAACCCATTCC  
CAGGAGATGGACTCTGGGACTGAATATGGCATGGGAGCAGCACCAAGCCTCTTCAACCCCTTTGTGGACCCC  
AGAGTATACAGACGTCTCCACTGATGAAGATGAAGAGGATGAGGAATCATCAGCCGCGAGCTCTGTTTACTAGC  
GAACTTCTTAGGCAAGAACAGGCCAAACTCAATGAAGCAAGAAAGATTTCCGGTGGTAAATGTAAACCCCAACCAAC  
ATTGCGCCTCATAGCGACACACAGAAATCAGAAATACAGAAACGATTCAACTCAGAAATACTTTGTGCAGCT  
CTGTGGGGGTAAACCTTCTGTGGGGACTGAAATATGGCCTGATGCTTTTGGACCGAAGTGGGCAAGGCAAAAGTC  
TATAATCTGATCAACCGGAGCGATTTCAGCAGATGGATGTGCTAGAGGACTGAATGTCTTGTGACAAATTTCA  
GGAAAGAAAGATAAGCTACGAGTTTACTATCTTTCATGGTTAAGAAACAGAAATACATACATAATGACCCAGAAAGTA  
GAAAAGAAACAAAGGCTGGATCACTGTTGGGACTTGGAAAGGCTGTATACATTATAAAGTTGTTAAATATGAAAGG  
ATCAAAATTTTGGTGATTGCCCTTAAAGAAATGCTGTGGAATATATGCTTGGGCTCCTAAACCGTATCATAAATTC  
ATGGCATTTAAGTCTTTTGCAGATCTCCAGCACAAAGCCTCTGCTAGTTGATCTCACGGTAGAAGAGGTCAAAGA  
TTAAAGGTTATTTTGGTTTACACACTGGTTTCCATGTAAATTGATGTTGATTTCAGGAAACTCTTATGATATCTAC  
ATACCATCTCATATTACAGGGCAATATCACTCCTCATGCTATTGTCTATCTTGCCCTAAACAGATGGAAATGGAAATG  
CTTGTGTTGCTATGAGGATGAGGGGTGTATGTAAACACCTATGGCCGGATAACTAAGGATGTGGTGTCTCCAATGG  
GGAGAAATGCCACCGTCTGTGGCCCTACATTCCAAATCAGATAAATGGGCTGGGCGAGAAAGCTATTGAGATC  
CGGTGAGTGGAAACAGGACATTTGGATGGAGTATTTATGCATAAGCGAGCTCAAAGGTTAAAGTTTCTATGTGAA  
AGAAATGATAAGGTATTTTGTGATCCGTCGATCTGGAGGAAGTAGCCCAAGTGTTTTTCATGACCCCTCAACAGA  
AATTCATGATGAACCTGGTAA

FIG. 22B



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PIE

ATGGCGAGCGACTCCCGGCTCGAAGCCCTGGATGAAATAGATCTCTCGGCTCTGAGGGACCCCTGCAGGGATCTTT  
GAATTGGTGGAACTTGTGGAAATGGAACATACGGGCAAGTTTATAAGGGTCGTCAATGTCAAAAACGGGCCAGCTT  
GCAGCCATCAAGGTTATGGATGTACAGGGGATGAAGAGGAAGAAATCAAAACAAGAAATTAACATGTTGAAGAAA  
TATTCTCATCACCGGAATATTGCTACATACTATGCTGCTTTTATCAAAAAGAACCCACAGGCATGGATGACCAA  
CTTTGGTTGGTGTGAGTTTTTGTGTGCTGCTGTGTACCGACCTGATCAAGAACACAAAAGGTAACACGTTG  
AAAGAGGAGTGGATTGCATACATCTGCAGGGGAAATCTTACGGGGCTGAGTCACCTGCACCCAGCATAAAGTGATT  
CATCGAGATATTAAAGGGCAAAATGTCTTGTGCTGACTGAAATGCAAGAAATTAACTAGTGGACTTTGGAGTCAGT  
GCTCAGCTTGATCGAACAGTGGGCAGGAGGAATACTTTTCAATTGGAACTCCCTACTGGATGGCACCAGAAAGTTATT  
GCCTGTGATGAAAACCCAGATGCCACATATGATTTCAAGAGTGACTTGTGGTCTTTGGGTATCACCGCCATTGAA  
ATGGCAGAAAGGTGCTCCCTCTCTGTGACATGCACCCCATGAGAGCTCTCTTCTCATCCCGGAATCCAGCG  
CCTCGGCTGAAGCTAAGAAGTGGTCAAAAATTCAGTCAATTTATTGAGAGCTGCTTGGTAAAGAAATCACAGC  
CAGCGACCAGCAACAGAAACAATTGATGAAGCATCCATTTATACGAGACCAACCTAATGAGCGACAGGTCCGCATT  
CAACTCAAGGACCATATTGATAGAACAAGAAAGCAGGAGAAAGATGAGACAGAGTATGAGTACAGTGA  
AGTGAGGAAGAAAGAGGAGAGAAATGACTCAGGAGAGCCAGCTCCATCTGAAATCTGCCAGGGAGTCCGACGCTG  
CGGAGGACTTTCTGAGGCTGCAGCTGGCCCAACAAGGAGCGTTCTGAGGCCCTACGGAGGCAGCAGCTGGAGCAG  
CAGCAGCGGGAGAAATGAGGAGCACAAAGCGGAGCTGTGGCCGAGCGTCAGAAAGCGCATCGAGGAGCAGAAAGAG  
CAGAGCGCGGCTGGAGGAGCAACAAGCGGAGAGAAAGGAGCTGCGGAAGCAGCAGGAGAGGAGCGGCCG  
CACTATGAGGAGCAGATGCGCCGGGAGGAGGAGGCGGTGCGGAGCATGAACAGGAATACATCAGGCGACAG  
TTAGAGGAGGAGCAGACAGTTAGAGATCTTGACAGCAGCTACTGCATGAACAAGCTCTACTTCTGGAATAT  
AAGCGCAACAATTGGAAGAACAGAGACAAGCAGAAAGACTGCAGAGGCAGCTAAAGCAAGAAAGAGACTACTTA  
GTTTCCCTTCAGCATCAGCGGAGGAGCAGAGGCTGTGGAGAAAGCAAGCCACTGTACCATTACAAAGAGGAATG  
AGTCCTAGTGAGAAAGCCAGCATGGGCCAAGGAGATCCACATCTGGTAGCTGTAAATCCCAAGGACCTGCCCTTG  
ACCGCTCCAGTCAGTGCAGGAGCAGCCCAAAAGGCCCTCTCTGGGTTTCAGGAGGCTCTGAACGTGACCTCC  
CACCGCGTGGAGATGCCACGCCAGAACTCAGATCCACCTCGGAAATCTCTCTCTCCCTCCACTCGCATTTGAAAAG  
TTTGACCGAAGCTCTTGGTTACGACAGGAAGAGACATTCACCAAGGTGCCTCAAGAACTTCTATATATCC  
CCAGCATTAGCCAGAAAGAAATCTCTCTGGGAATGGTAGTGCTCTGGACCCAGACTAGGATCTCAACCCATCAGA  
GCAAGCAACCTGATCTCCGGAGAACTGAGCCCATCTTGGAGAGCCCTTTCAGAGGACCAGCAGTGCGCAGTTCC

FIG. 23A



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TCCAGCTCCAGCACCCCTAGCTCCAGCCAGCTCCCAAGGAGGCTCCAGCCTGGATCACAGCAGGATCCAGT  
GAACGCCACAGAGTTCGAGCCAAACAGTAAGTCAGAAAGGATCACCTGTGCTTCCCCATGAGCCTGCCAAGGTGAAA  
CCAGAAGAATCCAGGGACATTACCCGGCCAGTCGACCAAGCTAGCTACAAAAAAGCTATAGATGAGGATCTGACG  
GCATTAGCCAAAGAACTAAGAGAACTCCGGATTGAAGAAACAAACGCCCAAATGAAGAAAGGTGACTGATTACTCC  
TCCTCCAGTGAGGAGTCAGAAAAGTAGCGAGGAAGAGGAGGAAGATGGAGAGAGCGAGACCCCATGATGGGACAGTG  
GCTGTCAGCGACATACCCAGACTGATACCAACAGGAGCTCCAGGCAGCAACGAGCAGTACAATGTGGGAATGGTG  
GGGACGCAATGGGCTGGAGACCTCTCATGCGGACAGTTTCAGCGGCAAGTATTCAAGAGAAAGAACCTTGATGATT  
AGAGAGACGCTCGGAGAGAAAGCGATCTGGCCACAGTGACAGCAATGGCTTTGCTGGCCACATCAACCTCCCT  
GACCTGGTGCAGCAGAGCCATTCTCCAGCTGGAACCCCGACTGAGGACTGGGGCGCTCTCAACCCATTCCCAG  
GAGATGGACTCTGGGACTGAATATGGCATGGGAGCAGCACCAAGCCCTCCTTCACCCCTTGTGGACCCCCAGA  
GTATACCGACGCTCTCCACTGATGAAGATGAAGAGGATGAGGAAATCATCAGCCGCGAGCTCTGTTTACTAGCGAA  
CTTCTTAGGCCAAGAACAGGCCAAACTCAATGAAGCAAGAAAGATTTGCGTGGTAAATGTAAACCCCAACATTT  
CGGCCCTCATAGCGACACACAGAAAATCAGAAAATACAGAAAACGATTCAACTCAGAAAATACTTTGTGCAGCTCTG  
TGGGGTGTAACCTTCTGTGGGACTGAAAATGGCCCTGATGCTTTTGGACCCGAAGTGGGCAAGGCAAAAGTCTAT  
AATCTGATCAACCCGGAGGCGATTTCAGCAGATGGATGTGCTAGAGGGACTGAATGTCTTGTGACAAATTTTCAGGA  
AAGAGAAATAAGCTACGAGTTTACTATCTTTTCATGTTTAAAGAAACAGAAATACATAAAGTTGTAAATATGAAGGATC  
AAGAAACAAGGCTGGATCACTGTTGGGACTTGGAAAGGCTGTATACATTATAAAGTTGTAAATATGAAGGATC  
AAATTTTGGTGATTGCCCTTAAAGAAATGCTGTGGAAATATATGCTTGGGCTCCTAAACCGTATCATATAATTTCATG  
GCATTTAAGTCTTTTGCAGATCTCCAGCACAAAGCCCTCTGCTAGTTGATCTCACGGTAGAAGAGGTCAAAGATTA  
AAGGTTATTTTGGTTACACACACTGGTTTCCATGTAATTGATGTTGATTCAGGAAACTCTTATGATATCTACATA  
CCATCTCATATTCAGGGCAATATCACTCCTCATGCTATTGTCTATCTTGCCTAAACAGATGGAATGGAAATGCTT  
GTTTGCATAGGATGAGGGGTGTATGTAAACACCTATGGCCGGATAACTAAGGATGTGGTCTCCAATGGGGA  
GAAATGCCACGCTGTGGCCCTACATTCATTCCAATCAGATAATGGCTGGGCGAGAAAGCTATTGAGATCCGG  
TCAGTGGAAAACAGGACATTTGGATGGAGTATTTATGCATAAGCGAGCTCAAAGGTTAAAGTTTCTATGTGAAAGA  
AATGATAAGGTATTTTGTGCATCCGTGCGATCTGGAGGAGTAGCCCAAGTGTTTTTTCATGACCCCTCAACAGAAAAT  
TCCATGATGAAGTGGTAA

FIG.\_23B



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ATGGCGAGCGACTCCCCGGCTCGAAGCCTGGATGAAATAGATCTCTCGGCTCTGAGGGACCCCTGCAGGGATCTTT  
GAATTGGTGGAACCTTGTGGAAATGGAACATACGGGCAAGTTTATAAGGGTCGTCATGTCAAAAACGGGCCAGCTT  
GCAGCCATCAAGGTTATGGATGTCACAGGGGATGAAGAGAAATCAAAACAAGAAATTAACATGTTGAAAGAAA  
TATTCTCATCACCGGAATATTGCTACATACTATGGTGCTTTTATCAAAAAGAACCCACAGGCATGGATGACCAA  
CTTTGGTTGGTGATGGAGTTTGTGGTGCTGGCTCTGTCAACCGACCTGATCAAGAACAACAAGGTAACACAGTTG  
AAAGAGAGTGGATTGCATACATCTGCAGGGAAATCTTACGGGGCTGAGTCACCTGCACCAAGCATAAAGTGATT  
CATCGAGATATTAAAGGGCAAAATGTCTTGCTGACTGAAATGCGAGAAATTAAACTAGTGGAATTTTGGAGTCACT  
GCTCAGCTTGATCGAACAGTGGCAGGAGGAATACTTTTCAATTGGAACTCCCTACTGGATGGCACCAAGATTATT  
GCCGTGATGAAACCCAGATGCCACATATGATTTCAAGAGTGACTTGTGGTCTTTGGGTATCACCGCCATTGAA  
ATGGCAGAAAGTGCTCCCCCTCTCTGTGACATGCACCCCATGAGAGCTCTCTTCTCTCATCCCCGGAATCCAGCG  
CCTCGGCTGAAGCTAAGAGTGGTCAAAAAAATTCAGTCAATTTATTGAGAGCTGCTTGGTAAAGAAATCACAGC  
CAGCGACCAAGCAACAGAAACAATTGATGAAGCATCCATTTATACGAGACCAACCTAATGAGCGACAGGTCCGCAAT  
CAACTCAAGGACCATATTGATAGAAACAAGAAAGCGAGGAGAAAGATGAGACAGAGTATGAGTACAGTGGA  
AGTGAGGAAGAAGAGGAGGAGAAATGACTCAGGAGAGCCCCAGCTCCATCTCTGAATCTGCCAGGGAGTCCGACGCTG  
CGGAGGACTTTCTGAGGCTGCAGCTGGCCAAACAAGGAGCGTTCTGAGGCCCTACGGAGGCAGCAGCTGGAGCAG  
CAGCAGCGGGAGAAATGAGGAGCAACAAGCGGAGCTGCTGGCGAGCGTCAGAAAGCGCATCGAGGAGCAGAAAGAG  
CAGAGGCGGGCTGGAGGAGCAACAAGCGAGAGAAAGAGCTGCGGAAAGCAGCAGGAGAGGAGCAGCGCCGG  
CACTATGAGGAGCAGATGCCCGGAGGAGGAGGAGGCGTGGGAGCATGAACAGGAATACATCAGGCGGACAG  
TTAGAGGAGGAGCAGACAGTTAGAGATCTTGACGACGAGCTACTGTCATGAACAAGCTCTACTTCTGGAATAT  
AAGCGCAAAACAATTGGAAGAACAGAGACAAGCAGAAAGACTGCAGAGGCAGCTAAAGCAAGAAAGAGACTACTTA  
GTTTCCCTTCAGCATCAGCGGCAGGAGCAGAGGCCCTGTGGAGAAAGCCACTGTACCATTAACAAGAAAGGAATG  
AGTCCCTAGTGAGAAGCCAGCATGGGCCAAGGAGGTAGAAGAACGGTCAAGGCTCAACCGGCAAGTTCCCCCTGCC  
ATGCCCTACAAGGTTGCCAACAGGATATCTGACCCCCAACCTGCCCAAGGTGCGAGTCTTTCAGCATTAGTGGA  
GTTTCAGCCTGCTCGAACACCCCCCATGCTCAGACCCAGTCCGATCCCCCAGATCCACATCTGGTAGCTGTAAATCC  
CAGGGAACCTGCTTGAACCGCTCCCAAGTCAAGTCAAGCAGCAGCCCCACAAGGGCCCTCTCTGGGTTTCAGGAGGCT  
CTGAACGTGACCTCCCAACCGGTGGAGATGCCACGCCAGAACTCAGATCCCACTCGGAAATCCCTCTCTCCCC  
ACTCGCATTGAAAAGTTTGACCGAAGCTCTTGGTTACGACAGGAAGAGACATTCACCAAAAGGTGCCCTCAAAGA  
ACAACTTCTATATCCCCCAGCATTAGCCAGAAAAGAAATTTCTCTGGGAATGGTAGTGCTCTGGGACCCAGACTAGGA

FIG.-24A

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TCTCAACCCATCAGAGCAAGCAACCCCTGATCTCCGGAGAACTGAGCCCATCTTGGAGAGCCCTTGCAGAGGACC  
AGCAGTGGCAGTTCTCCAGCTCCAGCACCCCTAGCTCCAGCCAGCTCCCAAGGAGGCTCCAGCCTGGATCA  
CAAGCAGGATCCAGTGAAACGACAGAGTTCGAGCCAAACAGTAAGTCAGAAGGATCACCTGTGCTTCCCCATGAG  
CCTGCCAAGGTGAACCCAGAGAATCCAGGGACATTACCCGGCCAGTCGACCGCTGATCTGACGGCATTAGCC  
AAAGAACTAAGAGAACTCCGGATTGAAGAAACAAACCGCCCAATGAAGAAGGTGACTGATTACTCTCTCCAGT  
GAGGAGTCAGAAAGTAGCGAGGAAGAGAGGAAGATGGAGAGCGAGACCCCATGATGGGACAGTGGCTGTGACG  
GACATACCCAGACTGATACCAACAGGAGCTCCAGGCAGCAACGAGCAGTACAAATGTGGGAATGTTGGGACGCAT  
GGGCTGGAGACCTCTCATGCGGACAGTTTCAGCGGCAGTATTTCAAGAGAGGAACCTTGTATGATTAGAGAGACG  
TCTGGAGAGAAGAGCGATCTGGCCACAGTGACAGCAATGGCTTTGCTGGCCACATCAACCTCCCTGACCTGGTG  
CAGCAGAGCCATTCTCCAGCTGGAAACCCCGACTGAGGGACTGGGGCGCTCTCAACCCCATTCACGAGAGATGGAC  
TCTGGGACTGAATATGGCATGGGAGCAGCACCAAGCCCTCTTCAACCCCTTGTGGACCCAGAGTATACCCAG  
ACGTCTCCCACTGATGAAGATGAAGAGGATGAGGAATCATCAGCCGCGAGCTCTGTTTACTAGCGAACTTCTTAGG  
CAAGAACAGGCCAAACTCAATGAAGCAAGAAAGATTTCCGGTGGTAAATGTAAACCCCAACCAACATTTCGGCCTCAT  
AGCGACACACAGAAATCAGAAATACAGAAACGATTCAACTCAGAAATACTTTGTGCGAGCTCTGTGGGGTGTA  
AACCCTTCTGGTGGGACTGAAAATGGCCCTGATGCTTTTGGACCGAAGTGGGCAAGGCAAGTCTATAATCTGATC  
AACCGGAGCGGATTCAGCAGATGGATGTGTAGAGGACTGAATGTCTTGTGACAAATTCAGGAAAGAAAGAAAT  
AAGCTACGAGTTTACTATCTTTCATGGTTAAGAAACAGAAATACTACATAATGACCCAGAAAGTAGAAAGAAACAA  
GGCTGGATCACTGTTGGGACTTGGAAAGGCTGTATACATTATAAAGTTGTTAAATATGAAGGATCAAAATTTTGTG  
GTGATTGCCCTTAAAGAAATGCTGTGGAAATATATGCTTGGCTCCTAAACCGTATCATATAATTCATGGCATTTAAG  
TCTTTTGCAGATCTCCAGCACAGCCCTCTGCTAGTTGATCTCAGGTTAGAAAGGTCAAAAGATTAAGGTTATT  
TTTGGTTTACACACACTGGTTTCCATGTAATTGATGTTGATTCAGGAAACTCTTATGATATCTACATACCTCAT  
ATTCAGGGCAATATCACTCCCTCATGCTATTGTCTATCTTGCCTAAACAGATGGAATGGAATGCTTGTGCTGCTAT  
GAGGATGAGGGGTGTATGTAAACACCTATGGCCGGATAACTAAGGATGTGGTCTCCAATGGGAGAAATGCCCC  
ACGCTGTGGCCACATTCATTCCAATCAGATAATGGGCTGGGCGGAGAAAGCTATTGAGATCCGGTCAGTGGAA  
ACAGGACATTTGGATGGAGTATTATGCATAAGCGAGCTCAAAGGTTAAAGTTTCTATGTGAAAGAAATGATAG  
GTATTTTGTGCATCCGTGCGATCTGGAGGAAGTAGCCAAAGTGTTTTTCATGACCCCTCAACAGAAATTCATGATG  
AACTGGTAA

**FIG.\_24B**

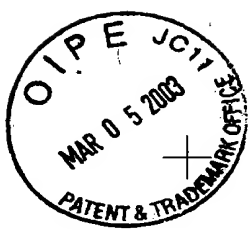


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ATGGCGAGCGACTCCCGGCTCGAAGCCTGGATGAAATAGATCTCTCGGCTCTGAGGGACCCCTGCAGGGATCTTT  
GAATTGGTGGAACTTGTGGAAATGGAACATACGGGCAAGTTTATAAGGGTCGTCTCATGTCAAAACGGGCCAGCTT  
GCAGCCATCAAGGTTATGGATGTACAGGGGATGAAGAGGAAGAAATCAACACAGAAATTAACATGTTGAAGAAA  
TATTTCTCATCACCGGAATATTGCTACATACTATGCTGCTTTTATCAAAAAGAACCCACAGGCATGGATGACCAA  
CTTTGGTTGGTGGATGAGTTTGTGGTCTGTCTGTCACCGACCTGATCAAGAACACAAAAGGTAAACACGTTG  
AAAGAGGAGTGGATTGCATACATCTGCAGGGAAATCTTACGGGGCTGAGTCACTGCAACCCAGCATAAAGTGATT  
CATCGAGATATTAAAGGGCAAAATGTCTTGCTGACTGAAATGCAAGTAAACTAGTGGACTTTGGAGTCAGT  
GCTCAGCTTGATCGAACAGTGGGCAGGAGGAATACTTTTCATTGGAACTCCCTACTGGATGGCACAGAAAGTTATT  
GCCTGTGATGAAAACCCAGATGCCACATATGATTTCAAGAGTGACTTGTGGTCTTTGGGTATCACCGCCATTGAA  
ATGGCAGAAAGTGCTCCCTCTCTGTGACATGCACCCCATGAGAGCTCTCTTCCCTCATCCCCCGGAATCCAGCG  
CCTCGGCTGAAGCTAAGAAAGTGGTCAAAAATTCAGTCAATTTATGAGAGCTGCTTGGTAAAGAAATCACAGC  
CAGCGACCCAGCAACAGAAACAAATTGATGAAGCATCCATTATACGAGACCAACCTAATGAGCGACAGGTCCGCATT  
CAACTCAAGGACCATATTGATAGAACAAGAGAGCGAGGAGAAAGATGAGACAGAGTATGAGTACAGTGGA  
AGTGAGGAAGAGAGGAGAAATGACTCAGGAGAGCCAGCTCCATCTCTGAATCTGCCAGGGAGTCGACGCTG  
CGGAGGACTTTCTGAGGCTGCAGCTGGCCCAACAGGAGCGTTCTGAGGCCCTACGGAGGCAGCAGCTGGAGCAG  
CAGCAGCGGGAGAAATGAGGAGCACAAAGCGGCAGCTGTGGCCGAGCGTCAAGAGCGCATCGAGGAGCAGAAAGAG  
CAGAGCGCGGCTGGAGGAGCAACAAAGCGGAGAGGAGCTGCGGAAGCAGCAGGAGAGGGAGCAGCGCCCG  
CACTATGAGGAGCAGATGCGCCGGAGGAGGAGAGCGGTGCGGAGCATGAACAGGAATATAAGCGCAACAA  
TTGGAAGAACAGAGACAAAGAAAGACTGCAGAGGCAGCTAAAGCAAGAAAGAGACTACTTAGTTTCCCTTCAG  
CATCAGCGCAGGAGCAGAGGCTGTGGAGAAAGCCACTGTACCATTACAAAGAAAGGAATGAGTCTTAGTGAG  
AAGCCAGCATGGGCCAAGGAGATCCACATCTGGTAGCTGTAAATCCCAGGGAAGTGCCTTGACCGCTCCCGAG  
TCAGTGACAGCAGCCCCAACAGGGCTCTCTGGGTTTCAGGAGGCTCTGAACGTGACCTCCACCGCGTGGAG  
ATGCCACGCCAGAACTCAGATCCCACCTCGGAAAATCCTCCTCTCCCCACTCGCATTGAAAAGTTTGACCCGAAGC  
TCTTGGTTACGACAGGAAGAACATTCACCAAAAGGTGCTCAAGAAACAACTTCTATATATCCCCAGCATTAGCC  
AGAAAGAAATCTCCTGGGAATGGTAGTGTCTTGGACCCAGACTAGGATCTCAACCCATCAGAGCAAGCAACCTT  
GATCTCCGGAGAACTGAGCCCCATCTTGGAGAGCCCCCTTGAGAGGACCCAGCAGTGGCAGTTCTCCAGCTCCAGC  
ACCCCTAGCTCCAGCCAGCTCCCAAGGAGGCTCCAGGCTGGATCACAAAGCAGGATCCAGTGAACGCACCCAGA

FIG.\_25A

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GTTCGAGCCACAGTAAGTCAGAAGGATCACCTGTGCTTCCCCATGAGCCTGCCAAGGTGAAACCCAGAAGAATCC  
AGGGACATTACCCGGCCAGTCGACCCAGCTAGCTACAAAAAGCTATAGATGAGGATCTGACGGCATTAGCCAAA  
GAACTAAGAGAACTCCGGATTGAAGAAAACAAACCGCCCAATGAAGAAGGTGACTGATTACTCTCTCCAGTGAG  
GAGTCAGAAAAGTAGCGAGGAAGAGGAGGAAGATGGAGAGCGAGACCCCATGATGGGACAGTGGCTGTTCAGCGAC  
ATACCCAGACTGATACCAACAGGAGCTCCAGGCAGCAACGAGCAGTACAATGTGGGAATGGTGGGACGCATGGG  
CTGGAGACCTCTCATGCGGACAGTTTCAGCGGCAGTATTTCAAGAGAAAGGAACCTTGATGATTAGAGAGACGTCT  
GGAGAGAAGAAGCGATCTGGCCACAGTGACAGCAATGGCTTTGCTGGCCACATCAACCTCCCTGACCTGGTGCGAG  
CAGAGCCATTCTCCAGCTGGAACCCCGACTGAGGGACTGGGGCGGCTCTCAACCCATTCCAGGAGATGGACTCT  
GGGACTGAATATGGCATGGGGAGCAGCACCAAGCCCTCTTCAACCCCTTTGTGGACCCAGAGTATACCGACG  
TCTCCCACTGATGAAGATGAAGAGGATGAGGAATCATCAGCCGCGAGCTCTGTTTACTAGCGAACTTCTTAGGCCAA  
GAACAGGCCAAACTCAATGAAGCAAGAAAGATTTCGGTGGTAAATGTAAACCCCAACCAACATTCGGCCTCATAGC  
GACACACCAGAAAATCAGAAAAATACAAGAAAACGATTCAACTCAGAAAATACTTTGTGACAGCTCTGTGGGTGTAAAC  
CTTCTGTGGGACTGAAAAATGGCCCTGATGCTTTTGGACCGAAGTGGGCAAGGCAAGTCTATAATCTGTATCAAC  
CGGAGGCGATTTCAGCAGATGGATGTGCTAGAGGGACTGAATGTCTTGTGACAAATTCAGGAAAGAAATAAG  
CTACGAGTTTACTATCTTTTCATGTTTAAGAAACAGAAATACATACATAATGACCCAGAAAGTAGAAAAGAAACAAGGC  
TGGATCACTGTTGGGACTTGGAAAGGCTGTATACATTATAAAGTTGTTAAATATGAAGGATCAAAATTTTGGTG  
ATTGCCCTTAAAGAAATGCTGTGGAATAATATGCTTGGGCTCCTAAACCGTATCATAAATTCATGGCATTTAAGTCT  
TTTGCAGATCTCCAGCACAAAGCCCTGCTAGTTGATCTCAGGTAGAAAGGTCAAGATTAAAGTTATTTT  
GGTTCACACACACTGGTTTCCATGTAATTGATGTTGATTCAGGAAACTCTTATGATATCTACATACCATCTCATATT  
CAGGGCAATATCACTCCTCATGCTATTGTCATCTTGCCTAACACAGATGGAATGGAAATGCTTGTGCTATGAG  
GATGAGGGGTGTATGTAAACACCTATGGCCGGATAACTAAGGATGTGGTGCTCCAATGGGAGAAATGCCACG  
TCTGTGGCCCTACATTTCATTCCAATCAGATAATGGGCTGGGCGGAGAAAGCTATTGAGATCCGGTCAGTGGAAACA  
GGACATTGAGATGAGTATTATGCATAAGCGAGCTCAAAGGTTAAAGTTTCTATGTGAAAGAAATGATAGGTA  
TTTTTTGTCATCCGTGCGGATCTGGAGGAAGTAGCCAAGTGTTTTTCATGACCCCTCAACAGAAAATTCATGATGAAC  
TGGTAA

FIG. 25B



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ATGGCGAGCGACTCCCCGGCTCGAAGCCCTGGATGAATAAGATCTCTCGGCTCTGAGGACCCCTGCAGGGATCTTT  
GAATGGTGGAACTTGTGGAAATGGAACATACGGGCAAGTTTATAAGGTCGTCTATAGGTCGTCTCAAAACGGGCCAGCTT  
GCAGCCATCAAGGTTATGGATGTCAAGGGGATGAAGAGGAAGAAATCAAAACAAGAAATTAACATGTTGAAGAAA  
TATTCTCATCACCGGAATATTGCTACATACTATGGTGCTTTTATCAAAAAGAACCCACAGGCATGGATGACCAA  
CTTTGGTTGGTATGGAGTTTGTGGTGCTGGCTCTGTACCGACCTGATCAAGAAACACAAGAGTAACACGTTG  
AAAGAGGAGTGGATTGCATACATCTGCAGGGAATCTTACGGGGCTGAGTCACTGCACACAGCATAAAGTGATT  
CATCGAGATATTAAAGGGCAAAATGTCTTGCTGACTGAAAATGCAGAAAGTTAAACTAGTGGACTTTTGGAGTCAGT  
GCTCAGCTTGATCGAACAGTGGCAGGAGGAATACTTTCAATTGGAACTCCCTACTGGATGSCACAGAAAGTTATT  
GCCTGTGATGAAAACCCAGATGCCACATATGATTTCAAGAGTGACTTGTGCTTTTGGGTATCACCGCCATTGAA  
ATGGCAGAAGTGCTCCCCCTCTCTGTGACATGCACCCCATGAGAGCTCTCTTCTCTCATCCCCGGAAATCCAGCG  
CCTCGGCTGAAGTCTAAGAGTGTCAAAAAAATTCAGTCAATTTATGAGAGCTGCTTGGTAAAGAATCACAGC  
CAGCGACCCAGCAACAGAACAAATTGATGAAGCATCCATTTATACGAGACCACTTAATGAGCGACAGGTCCGCATT  
CAACTCAAGGACCATATTGATAGAACAAAGAAAGAGCGAGGAGAAAAGATGAGACAGAGTATGAGTACAGTGGA  
AGTGAGGAAGAAGAGGAGGAATGACTCAGGAGAGCCAGCTCCATCCTGAACTGCCAGGGAGTCGACGCTG  
CGAGGGACTTTCTGAGGCTGCAGCTGGCCAAACAAGAGCGTTCTGAGGCCCTACGGAGGCAGCAGCTGGAGCAG  
CAGCAGCGGAGAAATGAGGAGCACAAAGCGGAGCTGTGCGGAGCGTCAAGCGCATCGAGGAGCAGAAAAGAG  
CAGAGCGCGGCTGGAGGAGCAACAAGCGGAGAGAGGAGCTGCGGAAGCAGCAGGAGAGGGAGCAGCGCCGG  
CACTATGAGGAGCAGATGCGCCGGAGGAGGAGGAGCGGTGCGGAGCATGAACAGGAATATAAGCGCAACAA  
TTGGAAGAACAGAGACAAAGCAAGAAAGACTGCAGAGGAGCTAAAGCAAGAAAGAGACTACTTAGTTTCCCTTCAG  
CATCAGCGCAGGAGCAGAGGCTGTGGAGAGAGAGCCACTGTACCAATTAACAAGAAAGGAATGAGTCTTAGTGAG  
AAGCCAGCATGGGCCAAGGAGGTAGAAGAACGGTCAAGGCTCAACCGGCAAGTTCCCTGCCATGCCCTCACAAAG  
GTTGCCAACAGGATATCTGACCCCAACCTGCCCCCAAGGTGCGAGTCCCTCAGCATTAGTGGAGTTCAGCCTGCT  
CGAACACCCCATGCTCAGACCAGTCTGATCCCCAGATCCACATCTGGTAGCTGTAAATCCAGGACCTGCC  
TTGACCGCTCCAGTCAAGTGCAGGAGAGCCCAACAAGGGCTCTCTGGGTTTCAGGAGGCTCTGAACGTGACC  
TCCCAACCGGTGGAGATGCCACGCCAGAACTCAGATCCCACTCGGAAAATCTCTCTCCCTCAGTTCGCAATTGAA  
AAGTTTGACCGGAGCTTTGGTTACGACAGGAAGAGACATTCACCAAGGTGCTCAAGAAACAACTTCTATA  
TCCCCAGCATTAGCCAGAAAAGAAATCTCTCTGGGAATGGTAGTGCTCTGGGACCCAGACTAGGATCTCAACCCATC

FIG. 26A







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AGAGCAAGCAACCCTGATCTCCGGAGAACTAGACCCCATCTTGGAGAGCCCCCTTGACAGAGGACCAGCAGTGCGCAGT  
TCCTCCAGCTCCAGCACCCCTAGCTCCAGCCAGCTCCCAAGGAGGCTCCAGGCTCCAGCTGGATCACAAAGCAGGATCC  
AGTGAACGCCACCCAGAGTTCGAGCCCAACAGTAAGTCAGAAAGGATCACCTGTGCTTCCCCATGAGCCTGCCAAAGGTG  
AAACAGAAAGAAATCCAGGGACATTAACCCGGCCAGTCGACCAAGCTGATCTGACGGCATTAGCCAAAGAACTAAGA  
GAACTCCGGATTGAAGAAACAAACCGCCCAATGAAGAGGTGACTGATTAATCTCTCTCCCTCAGTGAGGAGTCAAGAA  
AGTAGCGGAGGAGGAGGAAGATGGAGAGAGCGAGACCCCATGATGGGACAGTGGCTGTCAGCGCACATACCCAGAA  
CTGATACCAACAGGAGCTCCAGGCAAGCAACGAGCAGTACAATGTGGGAATGGTGGGACGCGCATGGGCTGGAGACC  
TCTCATGGGACAGTTTCAGCGGCAGTATTTCAAGAGAGAAAGAACCTTGATGATTAGAGAGACGTCTGGAGAGAAG  
AAGCGATCTGGCCACAGTGACAGCAATGGCTTTTGCTGGCCACATCAACCTCCCTGACCTGGTGCAGCAGAGCCAT  
TCTCAGCTGGAAACCCGACTGAGGAGCTGGGGCGGCTCTCAACCCATTCACAGGAGATGGACTCTGGGACTGAA  
TATGGCATGGGAGCAGCACCAAGCCCTCCTTCAACCCCTTTGTGGACCCAGAGTATACAGACGTCTCCCACT  
GATGAAGATGAAGAGGATGAGGAATCATCAGCCGCGAGCTCTGTTTACTAGCGAACTTCTTAGGCAAGAACAGGCC  
AAACTCAATGAAGCAAGAAAGATTTCCGGTGTAAATGTAAACCCCAACCAATTCGGCCTCATAGCGACACACCA  
GAAATCAGAAATACAAAGAAACGATTCAACTCAGAAATACTTTGTGCAAGCTCTGTGGGTGTAAACCTTCTCTGGTG  
GGGACTGAAATGGCCCTGATGCTTTTGGACCGAAGTGGGCAAGGCAAGTCTATAATCTGATCAACCGGAGGCGGA  
TTTCAGCAGATGGATGTGCTAGAGGGACTGAATGTCCCTTGTGACAAATTCAGGAAAGAAATAAGCTACGAGTT  
TACTATCTTTTCAAGTAAAGAAACAGAAATACTACATAATGACCCAGAAAGTAGAAAGAAAGAAACAAGGCTGGATCACT  
GTTGGGGACTTGGAGGCTGTATACATTATAAAGTTGTTAAATATGAAGGATCAAAATTTTGGTGATGCTCTTA  
AAGAAATGCTGTGGAATATATGCTTGGGCTCCTAAACCGTATCATAAATTCATGGCATTTAAAGTCTTTTGCAGAT  
CTCCAGCACAAAGCCCTGCTAGTTGATCTCAGGTAGAAAGGTCAAAGATTAAAGGTTATTTTGGTTTCCACAC  
ACTGGTTTCCCATGTAATTGATGTTGATTCAGGAAACCTCTTATGATATCTACATACCATCTCATATTCAGGGCAAT  
ATCACTCCTCATGCTATTGTCATCTTGCCTAAACACAGATGGAATGGAAATGCTTTGTTGCTATGAGGATGAGGGG  
GTGTATGTAAACACCTATGGCCGGATAACTAAGGATGTGGTGTCTCCATGGGGAGAAATGCCACGCTCTGTGGCC  
TACATTCAATCCAAATCAGATAAATGGGCTGGGGCGAGAAAGCTATTGAGATCCGGTCCAGTGGAAACAGGACATTTG  
GATGGAGTATTTATGCATAAGCGAGCTCAAAGGTTAAAGTTTCTATGTGAAAGAAATGATAAGGTAATTTTTTGTGCA  
TCCGTGCGATCTGGAGGAAGTAGCCCAAGTGTTTTTCATGACCCCTCAACAGAAATTCATGATGAACACTGGTAA>

**FIG.\_26B**







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TCCAGCTCCAGCACCCCTAGCTCCAGCCAGCTCCCAAGGAGGCTCCAGCCTGGATCACAAGCAGGATCCAGT  
GAACGCCACAGAGTTCGAGCCCAACAGTAAGTCAGAAGGATCACCTGTGCTTCCCCATGAGCCTGCCAAGGTGAAA  
CCAGAAGAATCCAGGGACATTACCCGGCCCCAGTCGACCTGATCTGACGGCATTAGCCAAAGAACTAAGAGAA  
CTCCGGATTGAAGAAACAACCCGCCCAATGAAGAGGTGACTGATTACTCCTCCTCCAGTGAGGAGTCAGAAAAGT  
AGCGAGGAAGAGGAGGAAGATGGAGAGAGCGAGACCCATGATGGGACAGTGGCTGTACGCGACATACCCAGACTG  
ATACCAACAGGAGCTCCAGGCAGCAACGAGCAGTACAATGTGGGAATGTTGGGGACGCAATGGGCTGGAGACCTCT  
CATCGGCACAGTTTCAGCGGCAGTATTTCAGAGAGAAAGAACCTTGATGATTAGAGAGACGCTCTGGAGAGAAAG  
CGATCTGGCCACAGTGACAGCAATGGCTTTGTCTGGCCACATCAACCTCCCTGACCTGGTGACGAGAGCCATTCT  
CCAGCTGGAAACCCGACTGAGGACTGGGGCGGCTCTCAACCCATTCCAGGAGATGGACTCTGGGACTGAAATAT  
GGCATGGGAGCAGCACCAAGCCTCCTTCAACCCCTTTGTGGACCCAGAGTATACCGAGACGTCTCCCCACTGAT  
GAAGATGAAGAGGATGAGGAATCATCAGCCGAGCTCTGTTTACTAGCGAACTTCTTAGGCAAGAACAGGCCAAA  
CTCAATGAAGCAAGAAAGATTTCGGTGGTAAATGTAAACCCCAACCAATTCGGCCTCATAGCGACACACCAGAA  
ATCAGAAAATACAAGAAACGATTCAACTCAGAAAATACTTTGTGCAGCTCTGTGGGTGTAAACCTTCTGTGGGG  
ACTGAAAATGGCCTGATGCTTTTGGACCGAAGTGGCAAGGCAAGTCTATAATCTGATCAACCCGAGGCGATT  
CAGCAGATGGATGTGCTAGAGGACTGAATGTCTTGTGACAAATTCAGGAAAGAAAGAAATAAGCTACGAGTTTAC  
TATCTTTTCATGGTTAAGAAACAGAAATACTACATAATGACCCAGAGTAGAAAAGAAACAAAGGCTGGATCACTGTT  
GGGACTTGGAGGCTGTATACATATAAAAGTTGTTAAATATGAAGGATCAAAATTTTGGTGATTGCCCTTAAAG  
AATGCTGTGGAAATATATGCTTGGGCTCCTAAACCGTATCATAAATTCATGCGCATTTAAAGTCTTTTGCAGATCTC  
CAGCACAAAGCCTCTGCTAGTTGATCTCAGGTAGAAAGGTCAAAGATTAAAGTTATTTTGGTTCAACACT  
GGTTTCCATGTAATTGATGTTGATTCAGGAAACTCTTATGATATCTACATACCATCTCATATTCAGGGCAATATC  
ACTCCTCATGCTATTGTCATCTTGCCCTAAACAGATGGAATGGAAATGCTTGTGCTATGAGGATGAGGGGGTG  
TATGTAAACACCTATGGCCGGATAACTAAGGATGTGGTGCTCCAATGGGGAGAAAATGCCACGCTCTGTGGCCCTAC  
ATTCAATCCCAATCAGATAATGGGCTGGGGCGAGAAAGCTATTGAGATCCGGTCAGTGGAAACAGGACATTTGGAT  
GGAGTATTATGCATAAGCGAGCTCAAAGGTTAAAGTTTCTATGTGAAAGAAATGATAAGGTATTTTGTGCATCC  
GTGCGATCTGGAGGAAGTAGCCCAAGTGTTTTTTCATGACCCCTCAACAGAAAATTCATGATGAACCTGGTAA

FIG.\_27B

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ATGGCGAGCGACTCCCGGCTCGAAGCCCTGGATGAAATAGATCTCTCGGCTCTGAGGGACCCCTGCAGGGATCTTT  
GAATTGGTGAACTTGTGGAAATGGAACATACGGGCAAGTTTATAAGGTCGTCAATGTCAAAACGGGCCAGCTT  
GCAGCCATCAAGGTTATGGATGTCACAGGGGATGAAGAGGAAATCAAAACAAGAAATTAACATGTTGAAGAAA  
TATTTCTCATCACCGGAATATTGCTACATACTATGGTGCTTTTATCAAAAAGAACCCACCAGGCATGGATGACCAA  
CTTTGGTTGGTATGGAGTTTGTGGTGCTGGCTCTGTCAACGACCTGATCAAGAACACAAAGGTAAACACGTG  
AAAGAGGAGTGGAATTGCATACATCTGCAGGGAAATCTTACGGGGGCTGAGTCACTGCACACAGCATAAAGTGATT  
CATCGAGATATTAAAGGGCAAAATGTCTTGTGCTGACTGAAATGCAGAAAGTTAAACTAGTGGAATTTGGAGTCAGT  
GCTCAGCTTGATCGAACAGTGGCAGGAGGAATACTTTCAATTGGAACCTCCCTACTGGATGGCACCAGAAAGTTATT  
GCCTGTGATGAAAACCCAGATGCCACATATGATTTCAAGAGTGACTTTGTGGTCTTTGGGTATCACCGCCATTGAA  
ATGGCAGAAGTGCTCCCTCTCTGTGACATGCACCCCATGAGAGCTCTCTTCTCTCATCCCCCGGAAATCCAGCG  
CCTCGGCTGAAGTCTAAGAAGTGGTCAAAAAAATTCAGTCAATTTATTGAGAGCTGCTTGGTAAAGAAATCACAGC  
CAGCGACCAGCAACAGAACAAATTGATGAAGCATCCATTTATACGAGACCAACCTAAATGAGCGACAGGTCCGCATT  
CAACTCAAGGACCATAATTGATAGAACAAAGAAAGCGAGGAGAAAGATGAGACAGAGTATGAGTACAGTGGA  
AGTGAGGAAGAAGAGGAGGAATGACTCAGGAGAGCCAGCTCCATCTCTGAATCTGCCAGGGAGTCGACGCTG  
CGAGGGACTTTCTGAGGCTGAGCTGGCCAAACAAGAGCGTTCTGAGGCCCTACGAGGCAGCAGCTGGAGCAG  
CAGCAGCGGAGAAATGAGGAGCACAAAGCGCAGCTGTGCCGAGCGTCAAGAGCGCATCGAGGAGCAGAAAGAG  
CAGAGCGGGGCTGGAGGAGCAACAAGCGGAGAGAAAGAGCTGCGGAAAGCAGCAGGAGAGGAGCGCGCGG  
CACTATGAGGAGCAGATGCGCCGGAGGAGGAGGCGGTGCGGAGCATGAACAGGAATATAAGCGCAAAACAA  
TTGGAAGAACAGACAAAGCAGAAAGACTGCAGAGGCACTAAAGCAAGAAAGAGACTACTTAGTTTCCCTTCAG  
CATCAGCGCAGGAGCAGAGGCTGTGGAGAAAGAACCACTGTACCATTAACAAGAGGAATGAGTCCTAGTGAG  
AAGCCAGCATGGGCCAAGGAGATCCACATCTGGTAGCTGTAAAATCCACAGGACCTGCTTGACCGCTCCAG  
TCAGTGACGAGCAGCCACAAAGGCGCTCTCTGGGTTTCAGGAGGCTCTGAACGTGACCTCCACCGCGTGGAG  
ATGCCACGCCAGAACTCAGATCCCACTCGGAAATCCTCTCTCCCACTCGCATTGAAAGTTTGACCGGAAGC  
TCTTGGTTACGACAGGAAGAGACATTCACCAAAAGGTGCTCAAGAAACAACCTTCTATATCCCCAGCATTAGCC  
AGAAAGAAATTCCTCTGGGAATGGTAGTGCTCTGGACCCAGACTAGGATCTCAACCCATCAGAGCAAGCAACCCT  
GATCTCCGGAGAACTGAGCCCATCTTGGAGAGCCCTTGCAGAGGACCAGCAGTGGCAGTTCTCTCCAGCTCCAGC  
ACCCCTAGCTCCCAGCCAGCTCCCAAGGAGGCTCCCGAGCTGGATCACAAAGCAGGATCCAGTGAAACGACCCAGA

FIG.\_28A



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GTTCGAGCCAAACAGTAAGTCAGAAAGGATCACCTGTGTCTTCCCATGAGCCTGCCAAGGTGAAACACAGAAAGAAATCC  
AGGGACATTACCCGGCCAGTCGACCCAGCTGATCTGACGGCATTAGCCAAAGAACTAAGAGAACTCCCGGATTGAA  
GAAACAAACCCGCCAATGAAGAAGGTGACTGATTACTCCTCCAGTGAGGAGTCAGAAAGTAGCGAGGAAGAG  
GAGGAAGATGGAGAGAGCGAGACCCATGATGGGACAGTGGCTGTGACGCGACATACCCAGACTGATACCAACAGGA  
GCTCCAGGCAGCAACGAGCAGTACAAATGTGGGAATGGTGGGACGCTGCGCTGGAGACCTCTCTCATGCGGACAGT  
TTCAGCGGCAGTATTTCAAGAGAAAGGAACCTTGATGATTAGAGAGACGCTCTGGAGAGAAAGCGATCTGGCCAC  
AGTGACAGCAATGGCTTTGCTGGCCACATCAACCTCCCTGACCTGGTGACGAGAGCCATTCTCCAGCTGGAACC  
CCGACTGAGGGA CTGGGGCGGTCTCAACCCATTCCCAGGAGATGGACTCTGGGACTGAAATATGGCATGGGGAGC  
AGCACCAAGCCCTCTTCAACCCCTTTGTGGACCCAGAGTATACCCAGACGCTCTCCACTGATGAAGATGAAGAG  
GATGAGGAATCATCAGCCGAGCTCTGTTTACTAGCGAACTTTTAGGCAAGAACAGGCCAAACTCAATGAAGCA  
AGAAAGATTTGCGGTGTAATGTAAACCAACCAATTCGGCCTCATAGCGACACACAGAAATCAGAAATATAC  
AAGAAACGATTCAACTCAGAAATACTTTGTGCAGCTCTGTGGGTGTAAACCTTCTGTGGGGACTGAAAAATGGC  
CTGATGCTTTTGGACCGAAGTGGCAAGGCAAGTCTATAATCTGATCAACCGAGGCGGATTTTCAGCAGATGGAT  
GTGCTAGAGGGACTGAAATGTCTTGTGACAAATTTTCAGGAAAGAAATAAGCTACGAGTTTACTATCTTTTCATGG  
TTAAGAAACAGAAATACATACATAATGACCCAGAAAGTAGAAAAAGAAACAAAGGCTGGATCACTGTTGGGGACTTGGAA  
GGCTGTATACATTATAAAGTTGTAAATATGAAAGGATCAAAATTTTGGTGATGCTTTTGCAGATCTCCAGCAACAGCCT  
ATATATGCTTGGCTCCTAAACCGTATCATATAATTCATGGCATTTAAAGTCTTTTGCAGATCTCCAGCAACAGCCT  
CTGCTAGTTGATCTCACGGTAGAAGAGGTCAAAGATTAAAGGTTATTTTGGTTTCAACACACTGGTTTCCATGTA  
ATTGATGTTGATTTCAGGAAACTCTTATGATATCTACATACCATCTCATATTCAGGGCAATATCACTCCTCATGCT  
ATTGTCATCTTGCTTAAACAGATGGAATGGAATGCTTTGTTGCTATGAGGATGAGGGGTGATGTAAACACACC  
TATGGCCGGATAACTAAGGATGTGGTGCTCCAAATGGGGAGAAAAATGCCACGCTCTGTGGCCTACATTCATTCCCAAT  
CAGATAATGGGCTGGGCGAGAAAGCTATTGAGATCCGGTCAGTGGAAACAGGACATTTGGATGGAGTATTTATG  
CATAAGCGAGCTCAAAGGTTAAAGTTTCTATGTGAAAGAAATGATAAGGTTATTTTTCATCCGTGCGATCTGGA  
GGAAGTAGCCAAAGTGTTTTTCATGACCCCTCAACAGAAAAATTCATGATGAACCTGGTAA

FIG.-28B



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1 MASDSPARSLDEIDLALRDPAGIFELVELVNGNGTYGVYKGRHVKTGQLAAIKVMDVTG  
61 DEEEIKQEIINMLKKYSHRNIAITYGAFIKNPPGMDDQLWLVMFCCGAGSVTDLIKNT  
121 KGNTLKEEWIAYICREILRGLSHLQHKVIHRDIKQNVLLLTENAEVKLVDFGVSAQLDR  
181 TVGRRNTFIGTPYMAPEVIACDENPDATYDFKSDLWSLGITAIEMAEAGAPPLCDMHPMR  
241 ALFLIPRNPAPRLKSKKWSKKFQSFIESCLVKNHSQRPATEQLMKHPFIRDQPNERQVRI  
301 QLKDHIDRTKKRGEKDETEYEGSEEEEEENDSGEPSSIINLPGESTLRRDFFRLQLA  
361 NKERSEALRRQQLQQRENEEHKRQLLAERQKRIEEQKEQRRRLLEEQQRRREKELRKQOE  
421 REQRRHYEEQMRREEERRRAEHEQEYKRKQLEEQQAERLQRLKQERDYLVSLOHQRQE  
481 QRPVEKKPLYHYKEGMPSEKPAWAKEVEERSRLNRQSSPAMPHKVANRISDPNLPPrSE  
541 SFSISGVQPARTPPMLRPVDPQIIPHLVAVKSQGPALTASQSVHEQPTKGLSGFQEALNVT  
601 SHRVEMPRONSDPTSENPPPLPTRIEKFRSSWLRQEEDI PPKVPQRTTSSIPALARKNSP  
661 GNGSALGPRLGSGQPIRASNPDLRRTEPILESPLQRTSSGSSSSSTPSSQSSQGGSQPG  
721 SQAGSSERTRVRANSKSEGSPLPHEPAKVKPEESRDITRPSRPASYKKAIDEDLTALAK  
781 ELRELRIEETNRPMKKVTDYSSSESESESESESETHDGTAVSDIPRLIPTGAP  
841 GSNEQYNVGMVGTHGLETSHADSFSGSISREGTLMIRETSGEKKRSGHSDSNGFAGHNL  
901 PDLVQQSHSPAGTPTTEGLGRVSTHSQEMDSGTEYGMGSSTKASFTPFVDPVRVYQTSPTDE  
961 DEEDESSAAALFTSELLRQEQAKLNEARKISVNVNPTNIRPHSDTPEIRKYKKRFNSE  
1021 ILCAALWGVNLLVGTENGLMLLDRSGQKVYNLINRRRFQQMDVLEGLNVLVTISGKKNK  
1081 LRVYVLSWLRNRIILHNDPEVEKKQGWITVGDLEGCIHYKVVKYERIKFLVIALKNAVEIY  
1141 AWAPKPYHKFMAFKSFADLQHKPLLVDLTVEEGQRLKVI FGSHTGFHVIDVDSGNSYDIY  
1201 IPSHIQGNITPHAIVILPKTDGMEMLVCEYDEGVYVNTYGRITKDVVLQWGEPTSVAIY  
1261 HSNQIMGWGEKAIEIRS VETGHLDDGVFMHKRAQRLKFLCERNDKVFFASVRSGGSSQVFF  
1321 MTLNRNSMMNWZ

FIG.-29



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1 MASDSPARSLDEIDL SALRDPAGIFELVGNNGTYGVYKGRHVKTGQLAAIKVMDVTG  
61 DEEEIKQEIINMLKKYSHHRNIATYYGAFIKKNPPGMDQLWLVMFCGAGSVTDLIKNT  
121 KGNTLKEEWIAYICREILRGLSHLQHVKV IHRDIKGQNVLLTENA EVKLVDFGVSAQLDR  
181 TVGRRNTFIGTPYWMAPEV IACDENPDATYDFKSDLWSLGITAIEMAEGAPPLCDMHPMR  
241 ALFLIPRNPAPRLKSKKWSKKFQSFIESCLVNHSQRPATEQLMKHPFIRDQPNERQVRI  
301 QLKDHIDRTKKRGEKDETEYEYSGSEEEEEENDSGEPSSIINLPGESTLRRDFLRLQLA  
361 NKERSEALRRQQLLEQQORENEEHKRQLLAERQKRIEEQKEQRRRLEEQQRRREKELRKQOE  
421 REQRRHYEEQMRREERERRAEHEQEYIRRLQLEEEQRQLEILQQQLLHEQALLLEYKRKQL  
481 EEQRQAERLQRLKQERDYLVS LQHQRQEPVEKKPLHYHKEGMSPEKPAWAKEI PHL  
541 VAVKSQGPALTASQSVHEQPTKGLSGFQEA LNVTSHRVEMPRQNSDPTSENPPLPTRIEK  
601 FDRSSWL RQEEI PPKVPQRTTISPALARKNSPGNGSALGPRLGSQPIRASNPDLRRTTE  
661 PILESPLQRTSSGSSSSSTPSSQSGSQPGSQAGSSERTVRANSKSEGSPVLPHE  
721 PAKVKPEESRDITRPSRPASYKKAIDEDLTALAKELRELRIEETNRPMKKVTDYSSSSEE  
781 SESSEEEEEGESETHDGTVAVSDI PRLIPTGAPGSNEQYNVGMVGTGHLETSHADSFSG  
841 SISREGTLMIRETSGEKKRSGHSDSNGFAGHINLPDLVQQSHSPAGTPTEGLGRVSTHSQ  
901 EMDSGTEYGMGSSSTKASFTPFVDP RVYQTSPTDEDEEDEESSAAALFTSELRLRQEQAKLN  
961 EARKISVVNVNPTNIRPHSDTPEIRKYKRFNSEILCAALWGVNLLVGTENGLMLLDRSG  
1021 QGKVYNLINRRRFQQMDVLEGLNVLTISGKKNKL RVYYLSWLRNRI LHNDPEVEKKQGW  
1081 ITVGDLEGCIHYKVVKYERIKFLVIALKNAVEIYAWAPKPYHKFMAFKSFADLQHKP LLLV  
1141 DLTVEEGQRLKVI FGSHTGFHVIDVDSGNSYDIYIPSHIQGNITPHAI VILPKTDGMEMML  
1201 VCYEDEGVVNTYGRITKDVVLQWGEMPTSVAYIHSNQIMGWGEKAIEIRSVETGHL DGV  
1261 FMHKRAQRLKFLCERNDKVFFASVRSGSSQVFFMTLNRNSMMNWZ

FIG.--30





1 MASDSPARSLDEIDLALRDPAGIFELVGNNGTYGVYKGRHVKTGQLAAIKVMDVTG  
61 DEEEIKQEIINMLKKYSHHRNIATYTGAFIKNPPGMDDQLWLVMFCGAGSVTDLIKNT  
121 KGNTLKEEWIAYICREILRGLSHLQHKVIHRDIKQNVLLTENA EVKLVDFGVSAQLDR  
181 TVGRRNTFIGTPYMAPEVIACDENPDATYDFKSDLWSLGTAIEMAEGAPPLCDMHPMR  
241 ALFLIPRNPAPRLKSKWKKFQSFIESCLVKNHSQRPATEQLMKHPFIRDQPNERQVRI  
301 QLKDHIDRTKKRGEKDETEYEGSEEEEEENDSGEPSSI LNLPGESTLRRDFLRLQLA  
361 NKERSEALRRQQLQQORENEEHKROLLAERQKRIEEQKEQRRRLLEEQQRRKEKELRKKQE  
421 REQRRHYEEQMRREERARRAEHEQEYIRRLQLEEEQRQLEILQQQLLHEQALLLEYKRKQL  
481 EEQRQAERLQRLQKQERDYLVSLOHQREQRPVEKKPLYHYKEGMSPEKPAWAKEVEER  
541 SRLNRQSSPAMPCHKVANRISDPNLP RSEFSISGVQPARTPPMLRPVDPQIPHVLAVKS  
601 QGPALTASQSVHEQPTKGLSGFQEA LNVTS HRVEMPRQNSDPTSENPPLPTRIEKFDRSS  
661 WLRQEEDIPPKVPQRTTISPALARKNSPGNGSALGPRLSQPIRASNPDLRRTEPILES  
721 PLQRTSSGSSSSSTPSSQPGSGSQPGSSERTRVRANSKSEGSVLPHEPAKVK  
781 PEESRDITRPSRPADLTALAKELRELRIEETNRP MKKVTDYSSSSSESESESESEEDGES  
841 ETHDGTAVSDIPRLIPTGAPGSNEQYNVGMVGTGLETSHADSFSGSISREGTLMIRET  
901 SGEKKRSGHSDSNGFAGHINLPDLVQQSHSPAGTPTTEGLGRVSTHSQEMDSGTEYGMGSS  
961 TKASFPTFPVDP RVYQTSPTDEDEEDESAAALFTSELLRQEQAKLNEARKISVVNVNPT  
1021 NIRPHSDTPEIRKYKRRFNSEILCAALWGVNLLVGTENGIMLLDRSGQKVYNLINRRRF  
1081 QQMDVLEGLNVLVTISGKKNKLRVYVYLSWLRNRI LHNDPVEVEKKQGWITVGDLEGCIHYK  
1141 VVKYERIKFLVIALKNAVEIYAWAPKPYHKFMFKSFADLQHKPLLVDLTVEEGQRLKVI  
1201 FGSHTGFHV IDVDSGNSYDIYIPSHIQGNITPHAI VILPKTDGMEMLV CYEDEGVYVNTY  
1261 GRITKDVVLQWGEMPTSVAYIHSNQIMGWGEKAIEIRSVETGHL DGVFMHKRAQRLKFLC  
1321 ERNDKVFFASVRSGGSSQVFFMTLNRNSMWNWZ

FIG.\_31





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1 MASDSPARSLDEIDLALRDPAGIFELVGNNGTYGVYKGRHVKTGQLAAIKVMDVTG  
61 DEEEIKQEIINMLKKYSHHRNIATYYGAFIKKNPPGMDQLWLVMFCGAGSVTDLIKNT  
121 KGNTLKEEWIAYICREILRGLSHLQHKKV IHRDIKGQNVLLTENAEEVKLVDFGVSAQLDR  
181 TVGRRNTFIGTPYMAPEVIA CDENPDATYDFKSDLWSLGITAIEMAEGAPPLCDMHMPMR  
241 ALFLIPRNPAPRLKSKKWSKKFQSFIESCLVKNHSORPATEQLMKHFFIRDQPNERQVRI  
301 QLKDHIDRTKKRGEKDETEYEGSEEEEEENDSGEPSSILNLPGESTLRRDFLRLQLA  
361 NKERSEALRRQQLEQQORENEEHKRLQLLAERQKRIEEQKEQRRRLEEQQRRREKELRKQOE  
421 REQRRHYEEQMRREERRAEHEQEYKQKQLEEQRAERLQRLKQERDVLVSLQHQRQE  
481 QRPVEKKPLYHYKEGMSPEKPAWAKEI PHLVAVKSQGPALTASQSVHEQPTKGLSGFQE  
541 ALNVTSHRVEMPRQNSDPTSENPPLPTRIEKFDRSSWL RQEE DIPKVPQRTTSSIPALA  
601 RKNSPGNGSALGPRLGSP IRASNPDLRRTEPILESPLQRTSSGSSSSSTPSSQPSQSG  
661 GSQPGSQAGSSERTRVRANSKSEGSVLPHEPAKVKEESRDITRPSRPASYKKAIDEDL  
721 TALAKELRELRIEETNRPMMKVTDYSSSSSESESESETHDGTAVAVSDIPRLI  
781 PTGAPGSNEQYNVGMVGTGTHGLETSHADSFSGSISREGTLMIRETSGEKKRSGHSDSNGFA  
841 GHINLPDLVQQSHSPAGTPTEGLGRVSTHSQEMDSGTEYGMGSSTKASFTFPVDPVYQT  
901 SPTDEDEEDEESSAAALFTSELLRQEQAKLNEARKISVVNVNPTNIRPHSDTPEIRKYKK  
961 RFNSEILCAALWGVNLLVGTENGLMLLDRSGQGVYNLINRRRFQQMDVLEGLNVLVTIS  
1021 GKKNKLRVYVLSWLRNRILHNDPEVEKKQGWITVGDLEGCIHYKVVKYERIKFLVIALKN  
1081 AVEIYAWAPKPYHKFMFKSFADLQHKPLLDLTVEEGQRLKVI FGSHTGFHVIDVDSGN  
1141 SYDIYIPSHIQGNITPHAI VILPKTDGMEMLVCYEDEGVVNTYGRITKDVVLQWGEMPT  
1201 SVAYIHSNQIMGWGEKAI EIRSVETGHLDGVMHKRAQRLKFLCERNDKVFFASVRS GGS  
1261 SQVFFMTLNRNSMMNWZ

FIG.\_32

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1 MASDSPARSLDEIDLALRDPAGIFELVELVNGTYGVYKGRHVKTGQLAAIKVMDVTG  
61 DEEEIKQEIINMLKKYSHHRNIATYGAFIKKNPPGMDDQLWLVMFCGAGSVTDLIKNT  
121 KGNTLKEEWIAYICREILRGLSHLHQHKVIHRDIKGQNVLLTENA EVKLVDGVSQAQLDR  
181 TVGRRNTFIGTPYMAPEVIA CDENPDATYDFKSDLWSLGITAIEMAEGAPPLCDMHMPMR  
241 ALFLIPRNPAPRLKSKKWSKKFQSFIESCLVKNHSQRPATEQLMKHPFIRDQPNERQVRI  
301 QLKDHIDRTKKRGEKDETEYEYSGSEEEEEENDSGEPSSIINLPGESTLRRDFLRLQLA  
361 NKERSEALRRQQLLEQQORENEEHKRQLLAERQKRIEEQKEQRRRLEEQQRREKELRKQOE  
421 REQRRHYEEQMRREERERRAEHEQEYKRKQLEEQQAERLQRLQKQERDYLVS LQHQRQE  
481 QRPVEKKPLYHYKEGMSPEKPAWAKEVEERSRLNRQSSPAMPHKVANRISDPNLP PRSE  
541 SFSISGVQPARTPPMLRPVDPQI PHLVAVKSQGPALTASQSVHEQPTKGLSGFQEALNVT  
601 SHRVEPRQNSDPTSENPPLPTRIEKFDRSSWL RQEEDI PPKVPQRTTISPALARKNSP  
661 GNGSALGPRLGSQPIRASNPDLRRTEPILESPLQRTSSGSSSSSTPSSQSSQGSQPG  
721 SQAGSSERTRVRANSKSEGSPVLPHEPAKVKPEESRDITRPSRPADLTALAKELRELRIE  
781 ETNRP MKKVTDYSSSSESESESESESETHDGTVAVSDIPRLIPTGAPGSNEQYNV  
841 GMVGTGLETSHADSFSGSISREGTLMIRETSGEKKRSGHSDSNGFAGHINLPDLVQQSH  
901 SPAGTPTGLGRVSTHSQEMDSGTEYGMGSSTKASFTPFVDPRVYQTSPTDEDEDEESS  
961 AAALFTSELRLRQEQA KLN EARKISVNVNPTNIRPHSDTPEIRKYKKRFNSEILCAALWG  
1021 VNLLVGTENGLMLLDRSGQGKVYNLINRRRFQQMDVLEGLNVLTISGKKKNKL RVYYLSW  
1081 LRNRILHNDPEVEKKQGWITVGDLEGCIHYKVVKYERIKFLVIALKNAVEIYAWAPKPYH  
1141 KFMAFKSFADLQHKPLLVDLTVEEGQRLKVI FGSHTGFHVIDVDSGNSYDIYIPSHIQGN  
1201 ITPHAIIVILPKTDGMEMLVCYEDEGVVNTYGRITKDVVLQWGEEMPTSVAYIHSNQIMGW  
1261 GEKAIEIRSVETGHLGDGVFMHKRAQRLKFLCERNDKVFFASVRSGSSQVFFMTLNRNSM  
1321 MNWZ

FIG.\_33

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1 MASDSPARSLDEIDLALRDPAGIFELVELVGNNGTYGQVYKGRHVKTGQLAAIKVMDVTG  
61 DEEEIKQEIINMLKKYSHHRNIATYGAFIKKNPPGMDQLWLVMFCGAGSVTDLIKNT  
121 KGNTLKEEWIAYICREILRGLSHLQHKKVIRHDIKQNVLLTENAENVKLVDGVSQAQLDR  
181 TVGRRNTFFIGTPYMAPEVIAACDENPDATYDFKSDLSLGITAIEMAEGAPPLCDMHPMR  
241 ALFLIPRNPAPRLKSKWSKFKFSFIESCLVNHSQRPAEQLMKHPFFIRDQPNERQVRI  
301 QLKDHIDRTKKRGEKDETEYEGSEEEEEENDSGEPSSILNLPGESTLRRDFLRQLA  
361 NKERSEALRRQLEQQORENEEHKRQLLAERQKRIEEQEQRRRLLEEQRREKELRKQOE  
421 REQRRHYEEQMRREERRAEHEQEYIRRRQLEEEQRQLEILQQQLLHEQALLLEYKRKQL  
481 EEQRQAERLQRLQKQERDYLVSLSLQHQRQEQRPVEKKPLYHYKEGMSPEKPAWAKEIPHL  
541 VAVKSQGPALTASQSVHEQPTKGLSGFQEAALNVTSHRVEPRQNSDPTSENPLPTRIEK  
601 FDRSSWLRQEEEDIPPKVPQRTTISIPALARKNSPGNGSALGPRLGSQPIRASNPDLRRTE  
661 PILESPLQRTSSGSSSSSTPSSQPSQSGSQAGSSERTRVRANSKSEGSPLPHE  
721 PAKVPEESRDI TRPSRPADLTALAKELRELRIEETNRPMKKVTDYSSSESESESESE  
781 EDGESETHDGTAVSDIPRLIPTGAPGSNEQYNVGMVGTGLETSHADSFSGSI SREGTL  
841 MIRETSGEKKRSGHSDSNGFAGHINLPDLVQQSHSPAGTPTTEGLGRVSTHSQEMDSGTEY  
901 GMGSSTKASFTPFVDPRVYQTSPTDEDEDEEESAAALFTSELLRQEQAKLNEARKISVV  
961 NVNPTNIRPHSDTPEIRKYKKRFNSEILCAALWGVNLLVGTENGLMLLDRSGQGVNLI  
1021 NRRRFQQMDVLEGLNVLTISGKKNKLRVYVYLSWLRNRI LHNDPEVEKKQGWITVGDLEG  
1081 CIHYKVVKYERIKFLVIALKNAVEIYAWAPKPYHKFMFKSFADLQHKPLLVDLTVEEGQ  
1141 RLKVI FGSHGTGFHVIDVDSGNSYDIYIPSHIQGNITPHAIIVILPKTDGMEMLVCYEDEGV  
1201 YVNTYGRITKDVVLQWGEMPTSVAYIHSNQIMGWGEKAIEIRSVETGHLGDGVFMHKRAQR  
1261 LKFLCERNDKVFFASVRSGGSSQVFFMTLNRNSMMNWZ

FIG.-34



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1 MASDSPARSLDEIDLALRDPAGIFELVELVNGTYGVYKGRHVKTGQLAAIKVMDVTG  
61 DEEEIKQEINMLKKYSHHRNIATYYGAFIKKNPPGMDDQLWLMEFCGAGSVTDLIKNT  
121 KGNTLKEEWIAYICREILRGLSHLHQHKV IHRDIKGQNVLLTENAENVKLVDGVSQALDR  
181 TVGRRNTFIGTPYMAPEVIACDENPDATYDFKSDLSLGITAIEMAEGAPPLCDMHPMR  
241 ALFLIPRNPAPRLKSKWKKFQSFIESCLVNHSQRPATEQLMKHPFIRDQPNERQVRI  
301 QLKDHIDRTKKRGEKDETEYEYSGSEEEEEENDSGEPSSIINLPGESTLRRDFLRQLA  
361 NKERSEALRRQLEQQORENEEHKRQLLAERQKRIEEQKEQRRRLEEQQRREKELRKQQE  
421 REQRRHYEEQMPREERERRAEHEQEYKRKQLEEQQAERLQRLKQERDYLVS LQHQRQE  
481 QRPVEKKPLYHYKEGMSPEKPAWAKEIPHLVAVKSQGPALTASQSVHEOPTKGLSGFQE  
541 ALNVTSHRVEMPRQNSDPTSENPPLPTRIEKFDRSSWLRLQEEEDIPPKVPQRTTTSISPALA  
601 RKNSPGNGSALGPRLGSQPIRASNPDLRRTTEPILESPLQRTSSGSSSSSTPSSQPSQSG  
661 GSQPGSQAGSSERTRVRANSKSEGSVLPHEPAKVKEESRDI TRPSRPADLTALAKELR  
721 ELRIEETNRPMKKVTDYSSSSESESESESETHDGTAVASDIPRLIPTGAPGSN  
781 EQYNVGMVGTGLETSHADSFSGSISREGTLMIRETSGEKKRSGHSDSNGFAGHINLPDL  
841 VQQSHSPAGTPTTEGLGRVSTHSQEMDSGTEYGMGSSTKASFTPFDPRVYQTSPTDEDEE  
901 DEESSAALFTSELLRQEQA KLN EARKISVNVNPTNIRPHSDTPEIRKYKKRFNSEILC  
961 AALWGVNLLVGTENGLMLLDRSGQGVYNLINRRRFQMDVLEGLNVLTISGKKNKLRV  
1021 YYLSWLRNRILHNDPEVEKKQGWITVGDLEGCIHYKVVKYERIKFLVIALKNAVEIYAWA  
1081 PKPYHKFMFKSFADLQHKPLLVDLTVEEQRLKVI FGSHTGFHVIDVDSGNSYDIYIPS  
1141 HIQGNITPHAIIVLPKTDGMEMLV CYEDEGVVNTYGRITKDVVLQWEMPTSVAYIHSN  
1201 QIMGWGEKAIEIRSVETGHLDDGVFMHKRAQRLKFLCERNDKVFFASVRS GGSSQVFFMTL  
1261 NRNSMMNWZ

FIG.-35